The Journal of the American Medical Association

VOL. XXXV. CHICAGO, ILLINOIS, NOVEMBER 24, 1900. No. 21.

Original Articles.

APPENDICITIS.*

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PHILADELPHIA.

For a number of years my experience differed from that of many operators in the fact that the trouble occurred 16 in the male to 1 in the female. An operation on a female, young or old, was uncommon; in boys and young men, very common. In the work of Hunter McGuire the proportion was precisely the same.

In the last three years my experience has wonderfully changed—the proportion now is about the same.

Coincident with increasing numbers of young females, I had a group of old women—some five or six, 60 to 72 years old—with severe attacks of appendicitis, most of them gangrenous.

In young women and children it has occurred in working girls and in young women fond of field sports. This has also been so in young men, about all of them have followed trades or some professional sport. It is simply surprising the great number of athletes—ball players and professional swimmers—requiring the removal of the appendix.

Young surgeons seem more prone to the disease than any other class of medical men. Three-fourths of the surgical staff of one of the prominent hospitals in our city have had their appendices removed.

The disease has been very common in Pennsylvania throughout the last grip epidemic, and has also been more common in females than ever before in my experience. In some villages and towns it has occurred in two and three female members of the same family. In the practice of a prominent western New York physician he saw three girls, aged 13, on the same day, and from all he promptly removed the gangrenous appendix; one of the three was his granddaughter.

I am satisfied the error of treating appendicitis for typhoid fever is more common in the female than in the male; the pain and tenderness is at a lower level in the female than in the male. The suppurations in the male are higher and quite commonly extend to the kidney—in a good number of cases recently in my own experience I found large quantities of pus and filth from the head of the cecum to the kidney, disorganization of the ascending colon with perforation or multiple perforations. Some few of these cases have occurred in the post-puerperal period, in a few during gestation. The pelvic complications in the female are sufficiently common in suppurative forms of tubal and ovarian disease to influence us in the adoption of the suprapubic route in all cases. In about 9 per cent. the appendix and the head of the cecum are involved, and require removal with the diseased tube and ovary.

You all remember, while students, how common psoas abscesses were in clinics and in the hospital wards; such cases at present are scarcely ever found in the hospitals. I have questioned large numbers of hospital residents and ex-residents as to whether they had had any of those cases during their term of service, and they have all answered, "None."

Perinephritic abscesses quite commonly have their origin in appendicitis. None of the cases in females have been mild and the original attacks have been severe, and but few of the patients have waited for subsidence or recurrence. In all that have waited for subsidence, the recurring attacks have resulted in sloughing, perforations, extensive adhesions and large abscesses.

Fortunately for patients, the general practitioner has not as much confidence in therapeutics and delay as he had a few years ago. It seems impossible to educate the profession up to the importance of prompt, early interference. Occasionally, we see a patient the seventh, eighth, or tenth day of his illness, distended and vomiting, and the consultants holding out for another day for the trial of croton-oil. Localities seem to have something of a causal nature in them. The disease is very common in Norristown, Pa.; also in West Chester, and in a broad district between there and Philadelphia, in both children and young people.

The diagnosis in girls or females is more difficult or doubtful than in males. The mortality is also higher; this, I am satisfied, is due to the delay and the delay to a doubtful diagnosis. The mortality in little children is also increased by the delay and dread the laity and profession have to operate on children.

The results from early operative interference are always favorable. If we made it a practice to operate when the trouble is first recognized, without the delay of a day or more for consultations and for therapeutical treatment, the deaths woud be very few. The fashionable and popular practitioner in small cities and towns is commonly a so-called very conservative man and claims that about all these cases can be cured by remedies, and gives us the ugly abscess class of cases and the virulent, perforative cases at the eleventh hour.

A great number of teachers are undecided as to when and how these cases should be treated. But few have decided there is only one treatment and that it can not be applied too early—the diagnosis being made.

Deaths are numerous all about us in good subjects that could and ought to be saved. Surgical interference, early, and never late, would save them all.

Recently a good and safe operator saw four patients two or three hours before dissolution—recognizing that they would die in a few hours without adding a feather to depress the beam.

Nothing can be sadder in our experience than the

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

last hours of many patients dying of appendicitis, the result of an error or a late diagnosis and prolonged medication, with the final suggestion that surgery is all that will avail.

DISCUSSION.

DR. WILLIAM R. PRYOR, New York City—The remarks I have to make bear on the relation of adnexal disease on the right side, to appendicitis. I have performed 173 vaginal hysterectomies for pelvic inflammatory lesions, and in only one case have I seen the appendix slough off, the patient being saved by operation thirty-six hours after vaginal hysterectomy. So much for the influence of removal of the diseased adnexa on the vitality of the appendix which may be adherent to it. In only two other cases have I had to do a laparotomy for the removal of an inflamed appendix some time after I had performed a vaginal hysterectomy. So much for the relation between chronic appendicitis and removal of inflamed adnexa through the vagina. These observations are somewhat important because it has gone out from a great many sources that if we find the appendix adherent to the diseased adnexa we may know that appendicitis exists. What I have seen convinces me that such is not the case, but that the perfectly normal appendix may become united to the diseased adnexa just as the intestines, etc., may be. Dr. Price is entirely right; the new athletic craze among young girls is responsible for the increase in appendicitis in them. Many of my cases were in golfers. The exercise is exceedingly violent and is generally sharply taken up by a girl who has never had much exercise before.

DR. G. T. HARRISON, New York City—I am on record as having operated on the youngest person for appendicitis. I operated the other night at the New York Infant's Asylum on a baby 17 days old. I found the intestines tied down in the neighborhood of the appendix and there was some suppuration. I do not believe that it was a case of appendicitis at all. It probably was an infection through the umbilical cord, which may be the cause of a good many of our cases of appendicitis in infancy.

DR. F. WARNER, Columbus—I would like to ask Dr. Price a question, one which is prompted not only by the title of the paper, but by a case which presented itself to me recently. The young lady had pains for twenty-four hours, and along with this pain there was rigidity of the muscles, vomiting, colic and tenderness over the region of the appendix. I operated and found a perforated appendix, together with much pus. In another case I operated on the second day, found no pus, but a decidedly inflamed appendix. The question at once presents itself: "When should we operate." Having seen a number of cases in my own practice as well as in that of others, I have been forced to the conclusion, irrespective of the opinion of many men, that if we are going to operate for appendicitis we must do it early. There are no reliable symptoms which will enable you to judge when it is safe to let a case run on for a while. I want to ask Dr. Price how are you going to know that there is a sloughing appendix or one undergoing gangrene. Oftentimes the symptoms will subside and suddenly a peritonitis sets in, due to the condition of the appendix. I believe that we will get much better results if we do our operations early rather than to temporize, hoping to get along without an operation. When people do not agree to an operation it is another matter, but when they do I am in favor of an immediate operation.

DR. EDWIN RICKETTS, Cincinnati—I saw a patient recently who had an attack of appendicitis five weeks before I saw her. I was called in great haste, and when I reached the house she was gasping; her lips and finger-nails were blue. She had been blistered over the region of the appendix. Finding dulness at the base of the right lung, I plunged in an aspirator, and drew out nearly a pint of fluid. The abdomen was hard and firm, and after a few days we opened it over the appendix, and took out two quarts of pus, showing that the pus in the pleura had perforated from the abdomen. This patient eventually recovered, but I had a difficult case on my hands. I have a record of 8 deaths out of 88 cases. The earliest possible diagnosis followed by the earliest possible operation, is the only thing to do.

DR. I. S. STONE, Washington, D. C.—The symptoms of appendicitis in young people are not often directed to McBurney's point. I remember one case very distinctly where there was no pain in the region of the appendix. I saw two cases where the pain was in the epigastrium, due to intestinal distension probably. In another case the symptoms were all on the left side, and I found the appendix nearly in the center of the abdomen. In regard to what Dr. Pryor said, a vaginal operation would surely have resulted in the death of the patient. The appendix was found torn off when I took out the pus sac. In late years I have made it a habit to look at every appendix before I close an abdomen. The last hysterectomy death I had was from a long adherent appendix.

DR. A. H. CORDIER, Kansas City—There is a remarkable mortality in cases occurring in young children, which I think is due to this reason. The great majority of cases of appendicitis in young girls are of a variety known as appendicitis gangrenosa, in which the symptoms come on very suddenly and on operating fifteen hours afterward the appendix is gangrenous. I think that in these young girls the ovarian artery has not developed fully and the blood-supply is deficient. Later in life the appendiculo-ovarian artery becomes better developed and we have fewer cases of appendicitis. In nine cases out of ten the first symptom these cases will present is a pain in the epigastrium, in the region of the solar plexus, which is due to the irritation of the sympathetic fibers. While the pain is located over the solar plexus the tenderness in the great majority of these cases is in the region of the appendix. The appendix early in life is not at McBurney's point. The cecum is high up in the abdomen and does not descend until later, hence we expect to find the appendix high up in the abdomen early in life. The least blocking of the single little vessel running up into the appendix cuts off the blood-supply and causes the death of the appendix and that variety of disease so fatal in early childhood.

DR. F. F. LAWRENCE, Columbus—I wish to emphasize the necessity of prompt and positive interference. I was called to see a young man who had been ill fifty hours. His bowels had moved and he was apparently all right. I was not inclined to operate, but stated to the father of the boy that it was only a matter of time as to whether we operated then or in interval. The father agreed to have the operation performed at once. I removed the appendix, which was so foul that two physicians who were in the room became sick and had to go out. Another case in which every danger seemed to be past, I operated on because the patient lived a distance from surgical relief. The appendix was removed, and in handing it to a by-stander it dropped into a basin of water and immediately ruptured. I do not believe that any human being is safe after having had an attack of appendicitis unless that appendix is removed.

DR. ROBERT MORRIS, New York City—I did not hear all of the paper, but there is one point connected with the question of appendicitis being dependent on athletic exercises which I wish to discuss. Place a patient on his back, then ask him to flex the leg so as to contract the psoas muscle, it will be readily seen that it rises in a hard firm ridge, hard enough to produce a traumatism if applied suddenly to any vulnerable appendix. A bicyclist riding a wheel up a hill contracts the psoas muscle so firmly and in such a hard ridge that the appendix is rolled over the edge of the hard psoas muscle with every stroke of the leg. This may no doubt be continued many times without producing any injury, but there is a definite cause for traumatism readily discoverable and one which I am sure causes a break in the mucosa of the appendix, and an infection atrium that produces the disease. A number of my cases have given the history of violent exercise, which included the firm constant contraction of the right psoas muscle. The young women of to-day are engaging in athletic exercises more than in years gone by, and this fact is certainly worthy of consideration. We can easily palpate the psoas muscle and satisfy ourselves that the appendix must be injured by it, producing a break in the mucosa and you have the best kind of an infection atrium.

DR. JOSEPH PRICE, closing the discussion—I am very thankful to you for your kind discussion. It has been a more scien-

tific one than we are accustomed to have on this subject. Deaths from appendicitis are much more common than they have been in the past. Even medical men seem to be especially afflicted with it. All through the country people are dying from appendicitis. A young lady, who had gone to Virginia Beach for the benefit of her health, developed appendicitis, and her physician recognizing it, gave her a note to me. I examined her carefully and told her to have her appendix out. She wanted to see her mother in New York first, and while there Dr. Boldt operated, and she made a beautiful recovery.

Tubercular appendicitis is common. About 2 per cent. is my own experience. You will find that where you have a tubercular appendix you have a localized patch of tubercular bowel, which you may have to remove. I find that a tubercular peritoneum is very much like a fine baby, the rougher you are with him the better he enjoys it, and the better he thrives. Separate the bowels, split the mesentery on both sides, expose it to the air, look at the right side, then at the left of the mesentery. The dry treatment is the most successful. If you can free all the adhesions without injury to the bowel they all get well. Injuries to the bowel rarely heal and the cases end fatally.

Dr. Pryor gives us a series of 173 operations and recoveries for diseased viscera, in which it was necessary to remove the appendix two or three days later. I found the appendix involved and primarily affected in 69 per cent. of cases of disease of the pelvic viscera. I remove the appendix at the time of operation because there is very little additional inconvenience to the patient. Some years ago, I removed the appendix of a nursing infant. It was a midnight operation, and the resulting peritonitis was general and fatal.

A man was admitted recently to some hospital for a stab wound. He also had appendicitis. The surgeon on opening the abdomen found the appendix perforated and removed it. I allude to this to show you how common it is. Some few surgeons, and I am satisfied the few I allude to ought to play with their grandchildren, always stand on two stools. On opening the abdomen before his class he will always say "gentlemen, this is a case of no appendix"; when he can not find it.

When to operate depends wholly on the diagnosis. I think it should be, and it can be made early. The methods of operating are too nummerous. A simple, rapid and safe procedure is that of cutting the appendix from the head of the cecum as you would a rotten apple. You can simply cut it out after introducing three or four ligatures and then close up the wound. Transfixion or circular ligation, the cautery and carbolic acid are unsurgical. I have noticed that it is very easy indeed to recognize the condition after anesthesia; much better than before. If you are in doubt about the operation etherize the patient and inform the family that additional efforts of the therapeutic sort are wrong and dangerous. I would rather operate 99 doubtful cases than to lose one that should be saved. None of your appendicitis cases should die.

POST-OPERATIVE TREATMENT OF ABDOMINAL SECTION IN WOMEN.*

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The closing of the abdominal incision is worthy of careful consideration, first as to the material, second as to the method of its use. As to material, choice may be had between silkworm-gut, silk and silver wire, for through-and-through suturing, any of which fulfill the needful requirement of a good suture. They should be introduced from within outward, thereby lessening in some degree the liability of infection and resulting stitch-hole abscesses.

If layer suturing is followed, catgut or kangaroo tendon should be employed. The cost of the latter practically excludes its use in general practice, but as to its tensile strength and slow absorption there can be no question.

Now that we have improved methods in the preparation of catgut from the standpoint of sterility, chromicised catgut for such use is practically an ideal suture. If this method is adopted its introduction should be dexterous and rapid, as the element of time is too important to be disregarded. Nicety of coaptation should mark every step in the procedure, and special care should be exercised that this apply in particular to two structures, the peritoneum and the transversalis fascia, as the latter gives most important support to the abdominal wall.

If through-and-through interrupted sutures are employed, they should be sufficiently near to carefully approximate the structures. Too often they are tied too tightly. This undue constriction of tissue tends to ulceration and cutting through of the suture. Even though layer suturing is followed, it is better to give it support by silkworm-gut sutures at intervals of three-quarters of an inch running down to the peritoneum.

Buried unabsorbable sutures ought never to be employed, first for the reason they are not required, and second they are foreign bodies, and as such contrary to good surgery from every standpoint. The line of incision can be dusted with iodoform or boric-acid gauze applied and secured in position by strips of adhesive plaster placed transversely. Unless the dressing is moistened by exudation it should remain a week or ten days. The stitches can well be left for ten to twenty days. In the through-and-through suturing case I usually remove the alternate sutures first, allowing the others to remain a few days longer for support.

Position.—Unless for reason I fear hemorrhage or undue traction on sutured intraperitoneal structures, I give my patients as much latitude of position (after abdominal section) as is conducive to their comfort. The rigid rules which many operators enforce, that the patient must remain on the back for days, and even keep the legs extended, is not only unnecessary, but harmful. Especially does change of position facilitate peristalsis and help relieve flatulence.

Treatment of Shock.—It is well just before the close of an abdominal section to give a high enema of a pint of hot normal-salt solution, containing an ounce of whisky, if evidences of shock are present. Should this be inadequate, intravenous or interstitial injections of warm (105 F.) salt solution may be administered with positive advantage, associated or followed by strychnin, spartein, caffein, nitroglycerin or atropin, according to the indications. Care should be exercised to maintain the bodily temperature by application of dry heat to the cutaneous surface, which is often diminished from wetting the patient during the operation, and by lowering the head and trunk sufficiently that the arterial current to the brain be aided by gravity.

Treatment of Hemorrhage.—Hemorrhage after laparotomy is a most unfortunate and perplexing occurrence. The differential diagnosis between the symptoms from hemorrhage and shock are of the highest importance, but time will not permit a discussion of the points of difference to any length. Shock and hemorrhage are both attended with rapid pulse. In hemorrhage the

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face is blanched. It may be to a less extent in shock. The symptoms of hemorrhage are usually sudden in their appearance, and progressive in their development, while the tendency in shock is likely to be toward improvement. Hemorrhage is usually attended with restlessness, while absence of this symptom is usual in shock. The efficiency of filling the blood-vessels with saline solution in the relief of hemorrhage covers one of the most brilliant chapters in conservative surgical procedure. While the adage remains true "that blood is thicker than water," the fact remains that water is better than no blood. Doubtless the depletion of the circulation is responsible for the intensity of thirst following laparotomy; at all events the leaving of a pint or quart of hot salt solution in the peritoneal cavity at the time of closing the abdomen diminishes this distressing symptom, and unless reason exists for leaving the peritoneal cavity dry it is good practice. Occasionally hemorrhage ceases spontaneously and nature seals the leak, but if serious, and the state of the patient threatening, no waiting is permissible. Nothing remains but to secure the bleeding vessel. Occasionally if space has been left for abdominal drainage the removal of the gauze may reveal the source of the bleeding, and the vessels may be secured either by ligature or compression. If the abdomen had been closed it must be opened. Under conditions like this when a few moments may determine the result, there is no time for delay or elaborate preparation; even the moving of the patient to the operating-table might imperil the results. Under such conditions when possible—which is usually practicable in hospital cases—do the work in bed, as suggested by Ricketts. By so doing you will save valuable time and perhaps your patient.

Drainage.—To drain or not to drain, is the question. This is a feature in pelvic surgery which constantly confronts the operator, in which only general rules can be formulated. Every surgeon deprecates the necessity of drainage, but recognizes its necessity in certain cases. It is a common statement now-a-days, that drainage after laparotomy means imperfect surgery. I desire to take issue with this theory as illogical and dangerous, and I do not hesitate to affirm that only the surgeon who is capable of discriminating when drainage is indicated, is to be trusted. True, the improved technique of these later days makes the necessity for drainage far less frequent, but every case must be judged by its own merits.

The truth of the saying that "he who hesitates is lost," finds no more ample field for demonstration, than in the faulty reasoning and reckless uncertainty which characterizes the vacillating and timid operator in deciding his course under conditions like these. If drainage is decided on, care must be exercised that neither too little nor too much material be used, and that it be dispensed with at the earliest possible moment. It is equally needful that it be so arranged that it shall not be incarcerated in the peritoneal viscera. Failure in this particular has led to awkward and disastrous consequences. If an area of some extent require drainage the gauze may be included in a Mikulicz bag, so that it can be removed at pleasure, and in such amount and from such portion of the bag as seems needful. Usually gauze with a coarse mesh, iodoform or plain, or the two in combination meet every indication. In some cases where considerable areas have to close in by granulation, or sinus remains, rubber tubing can be used later on to advantage. Occasionally, through-and-through drainage is to be recommended with manifest advantage. This is applicable in septic conditions, when a drain can pass from above into the pelvic cavity and down into the vagina or out through the flank from the pelvic cavity. The position and its bearing on the results in septic peritonitis has of late received attention. Fowler claims if the upper portion of the pelvic cavity be on a higher plane than the more dependent portion, the drainage is thereby greatly facilitated and recovery follows in what would appear to be otherwise hopeless cases. The further results of such procedures will be watched with interest, and the profession will not be slow to utilize any advantage such procedure confers.

Flatulence, Nausea and Vomiting.—In my individual experience the most common annoyance after laparotomy is flatulence, and that in spite of the most thorough preparation of the patient. In nausea, if occasioned by the anesthetic, that will disappear as the system eliminates the drug. If due to reversed peristalsis, and associated with bilious vomiting and diminished peristalsis, the use of salines is indicated.

Nutrition.—From twelve to twenty-four hours after the operation, according to the condition of the patient, teaspoonful quantities of hot mutton or chicken broth are given, at intervals of an hour or two. If acceptable, the quantity may be increased. If the stomach tolerates these, give beef-juice expressed from cooked beefsteak, milk with equal quantity of lime-water—if it is known that milk is well digested by the patient—at longer intervals of two or three hours. Nothing in my experience gives more discomfort to the patient than imperfect digestion of milk, extending to the whole length of the alimentary canal. Early feeding as is consistent with the patient's condition is advocated.

Urinary Secretion.—Unless some contraindication is present, allow the patient to micturate if she can. If she can not, have a catheter used four or six hours after the operation. This will give some suggestion whether the urinary tract has suffered injury during the operation and assist in determining the status of the renal secretion and the amount voided, which should be made a matter of exact clinical record; any marked decrease in the elimination of urea or other toxic agent should receive immediate attention. If there is a marked deficiency or suppression of the urinary secretion no time should be lost in re-establishing it. The agents to be employed are persistent dry cupping over the kidneys, the administration of salines by the mouth or by high rectal enema until brisk catharsis is established, assisted by calomel; copious drafts of pure water if admissible; the establishment of diaphoresis; and if the blood-pressure is diminished, the use of digitalis, together with the application of hot poultices to the back alternated with dry cupping. Under such management the secretion is usually restored.

The Pulse.—As a guide to diagnosis, prognosis and treatment in pelvo-abdominal surgery, the condition of the pulse is of great value. As an indicator of change and complications it serves as a barometer. As is the pulse so is the patient, is especially applicable in these conditions. In all cases the pre-operative pulse must be taken as the standard for comparison. If there is vital depression, the pulse becomes accelerated. Shock, hemorrhage, sepsis, all manifest their influence to modify its rhythm and power, and as a rule its rapidity and volume determine the status of the patient. To this rule there is one exception which should always be noted, that of over-stimulation of the inhibitory

cardiac nerves, in which case atropin is the remedy par excellence.

Usually in cases which do well, the pulse falls in frequency during the first twenty-four hours after operation, while rapid rise suggests the presence of some complication.

Temperature.—Closely allied with the causes which induce rapid pulse are those which manifest themselves in connection with rise in temperature. It may be safely assumed that a proper appreciation of the causes which lead to a variation of pulse and temperature will be the key to their management. Subnormal temperature means vital depression, and occurring soon after an operation indicates the presence of shock or hemorrhage. With the appearance of these symptoms there is usually absence of a hot face. Sudden rise of temperature during the first two days is regarded with suspicion. If due to nervous disturbances it will not be long maintained, but if persistent it is ominous of grave conditions. It may mark the advent of sepsis, either intra-abdominal suppuration or that arising from stitch-hole abscesses. If the latter, there will be localized pain; so also pulmonary complication, from either. Peritonitis and abdominal effusion produce fever, though the last condition usually occurs during the second week. A persistent temperature of 100 to 101 F., extending over a week, is occasionally present without assignable cause. Another form of fever which occurs in certain patients has, in my opinion, not received the consideration which its importance demands. I refer to malaria. This fact was profoundly impressed on my mind within the past few months, after operating on a lady from the south for the extirpation of an axillary growth, from a malarial development attended with high temperature and alarming weakness which nearly resulted fatally. A recent experience of a temperature of 106 F., complicating an operative case of appendicitis, from malaria tended to emphasize the necessity of discriminating it from other causes of hyperpyrexia. I have, therefore, made it a rule in all selected operative cases to ascertain whether the patient has ever suffered from malarial attacks, to the end that antimalarial treatment could be instituted prior to operation. If doubt exists as to the malarial origin of the attack, blood examination will reveal or exclude the presence of the plasmodium.

The treatment of stitch-hole abscesses consists in removal of the stitches, evacuating the pus, and providing for drainage. Abdominal distension—by causing pain and spasm—is sufficient to cause elevation of temperature. The presence of septic processes, whether local or systemic, or both—one being a sequence of the other—are the severest complications which confront the operator. If they are due to local pus accumulation the indications are plain and unmistakable; if to local or systemic infection which are not amenable to surgical interference a clear discernment as to indications for treatment must be formulated.

The rapid pulse and feeble cardiac movement, associated with low fever or subnormal temperature, resulting from overpowering septic peritonitis, must be differentiated from depression and slow exhaustion. The symptom of intestinal perforation or evacuation of pus into the peritoneal cavity is so grave a matter as to demand immediate attention. If any surgical aid is to be rendered there can be no delay.

Hyperpyrexia due to intraperitoneal infection usually requires the prompt exhibition of salines. As to the hyperpyrexia itself, the extraction of bodily heat by the application of cold promises most for the patient. Cutaneous sponging and the head and abdominal coil offer the most efficient measures for its relief. Under such conditions the use of the coal-tar derivatives to reduce temperature is never admissible. In profound systemic poisoning the heroic use of alcoholic stimulants, with supporting doses of quinin and appropriate heart tonics offer the best hope for the patient.

Pain.—The pain following laparotomy clamors for relief, and from whatever causes can not be altogether ignored. It is not to be assumed that all pain demands the use of anodynes; in fact their administration is a choice of evils. If due to intestinal distension by gaseous accumulation, the remedy should be found in the escape of the gas and the arrest of its formation. That the results of a laparotomy should be attended by pain is to be expected, but that often abates within the first twenty-four or thirty-six hours.

The nervous perturbation, from prolonged pain, is not only a source of irritation but may be sufficient to cause fever. The wise surgeon will so interpret the causes which lead to pain and the injury associated with it, that his remedies shall not only be timely in their exhibition but those which shall not unduly perturb the patient by their after-effect.

In most cases after laparotomy I find no need for giving anodynes, and for some years I have almost never resorted to morphia or opium.

When necessity makes needful some anodyne I give codein from ¼ grain up as is required. Most patients are tolerant of it, both as regards unpleasant after-effect on the nervous system and its comparative innocence in checking secretion and diminishing peristalsis, two very important considerations. Compound spirits of ether exercise some influence in the control of pain, while bromid of quinia acts both as a support and sedative.

Exhaustion.—Among the many unmentioned complications following laparotomy, the only other I shall refer to is exhaustion. In serious cases its degree and persistence mark the limitations of possible convalescence and its appropriate preventive treatment will antedate its positive development. Prudent but well-sustained feeding, stimulation and appropriate nursing will not be overlooked. When for any reason stomach digestion is impossible, early resort will be had to rectal alimentation and stimulation.

Tonics, like quinin, strychnin, and iron will find their appropriate field of usefulness, while the individual professional attention, untiring and persistent, will conserve to the fullest extent the strength of the patient and her chances of recovery.

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DISCUSSION.

DR. I. S. STONE, Washington, D.C.—Dr. Chase has given us a most valuable paper. I want to congratulate him that he has written something which is reliable. I often find that papers read before this body advocate a variety of treatment which if applied would be followed by disastrous results. Many of us have come to the conclusion that these cases get well without a great deal of after-treatment if the operation has been properly performed. When we close the abdomen it is about all we can do in many cases as far as saving the life of the patient is concerned. In regard to the use of morphin, we all agree that it is rarely necessary. I have heard many men say that it should never be given, never should be in reach for fear it might be used. I have rarely used morphin in my private hospital, but there are some cases where patients' lives have apparently been saved by it. The other day a lady was brought to my hospital, and although she was

a morphin fiend her physician did not mention it to me. This is decidedly wrong, as we should always be informed of it. The lady was operated on, and suddenly grew very pale, with cold, clammy skin, although there was little hemorrhage. Salt solution seemed to have no effect, other than slightly increasing the volume of the pulse. This condition continued for some hours. Finally we gave ⅛ grain of morphin with 1/200 grain of atropin, and that patient's condition changed for the better in the twinkling of an eye.

In closing an incision I used for years the serial, or layer, suture, but I now condemn it because the through-and-through sutures closely approximate the entire length of the incision in every direction, while the layer sutures leave spaces between the different layers which can not be approximated. After using the through-and-through suture, we put fine catgut suture in the fascia, and it is a rare thing to have a case of suppuration after that method.

With regard to preliminary stimulation, my experience has shown me that it is best to leave your patient alone for some days prior to the operation. Do not use digitalis or nitroglycerin or any other thing which young hospital physicians and family physicians do. The family will bring much pressure to bear on you to do something, but you will get better results if you will carefully avoid excessive stimulation and medication.

DR. REED, West Virginia—Dr. Stone has covered the point I was just about to make. We can not get along without through-and-through sutures, as we must perfectly approximate the different layers of the wound. After the suture has been placed we can use in addition some fine catgut, and you will rarely ever have a case trouble you because of suppuration. Suppuration will only occur when the catgut has not been sterile, and there is no way of being absolutely sure of that fact. The introduction of a stitch into the fascia, which can be removed at the same time that the through-and-through sutures are removed, seems to me desirable. That can be done by using silkworm gut and drawing the fascia together by a running stitch. By introducing a silkworm-gut from one end of the wound down through the skin, through the fascia, picking up the fascia on one side and on the other side one-half inch in advance, and so on, you have a continuous suture. When you draw on either end you bring the fascia together and the ends can be anchored by shot. It is re-enforced by through-and-through sutures so that there is no possibility of any yielding. If the fascia is in perfect apposition the silkworm-gut can be removed at the end of two weeks with perfect ease. There is no suture material left in the wound and consequently no possibility of infection.

DR. W. E. B. DAVIS, Birmingham, Ala.—I wish to say a few words in regard to the closure of the abdominal incision. I referred to this subject in my address. The tier suture with absorbable material has a just and high place in surgery and is practiced by many of the best surgeons, but the majority close the wound by the interrupted through-and-through suture of non-absorbable material. The method which I practice combines some of the advantages of both, and obviates some of their objectionable features. I use interrupted sutures of silkworm-gut, uniting the aponeurosis, recti muscles and peritoneum, and secure the sutures by means of very small silver tubes, corresponding in length to the thickness of the skin and subcutaneous fat, through which the ends of each suture are passed, and then through a perforated shot. After the aponeurosis has been well approximated, each tube is pressed well down and secured by the compression of the shot at the distal end of the tube. After all sutures have been secured, the skin is brought together with a very small size suture of silk or catgut. The sutures should be very superficial or subcuticular. The little tubes with shot project just beyond the wound. Compresses of gauze are placed on the sides of the incision to approximate the subcutaneous fat. The silkworm-gut sutures should remain from two to three weeks, and can be removed by clipping the ends of the suture between the tube and shot, and after the tube is removed the suture comes without difficulty. By this method the wound is freed of all foreign material before the patient is discharged, there being nothing left to cause subsequent trouble.

DR. A. H. GOELET, New York City—I agree with many of the points brought out by Dr. Chase, whose paper I have listened to with much interest, but I think the after-treatment of laparotomy should begin before the operation. I think it is of the greatest importance to prepare the patient thoroughly for operation. We must understand that patients who require these operations are not usually in good physical condition. The whole system is out of order. The digestive apparatus and the liver are not working properly, and I think that when we come to spend a few weeks in the preparation of our patient for operation we will have less trouble with the after-treatment. My experience has taught me this. The only cases where I have had trouble have been those where I left the preparation of the patient to the man who sent me the case. Where I have prepared the patient myself I have had no trouble.

Pain is one of the principal things we have to contend with in the after-treatment of laparotomy, and intestinal distension is responsible for the pain to a great extent. That can be, and should be, gotten rid of by thorough preparation of the patient before the operation. This is particularly important whenever an anesthetic is given, and when the abdomen is to be opened.

I was glad to hear Dr. Stone speak in favor of some anodyne after operation when the patient is suffering from pain. I think it is our duty to give morphin when the pain is excessive, and I have never seen any bad results from it when combined with atropin. It does not interfere with convalescence when judiciously used.

In regard to closing the abdominal wound, I think the objection raised to the buried suture comes not so much from the spaces left, because a good operator would not leave such spaces. It is because knots are left buried in the tissue and they act as foreign bodies. When I use a layer suture I never make a knot. I start with a slip-knot and make one continuous suture close all the different layers without tying at the end, and I avoid taking sutures through the skin, using the subcuticular suture. Where I have used deep interrupted silkworm-gut sutures I avoid the pain produced by the cutting of these sutures by putting a layer of several thicknesses of gauze below the knot on top of the line of incision, tying the sutures over the gauze. I have often relieved intestinal distention and pain satisfactorily by using asafetida, sometimes in the form of a suppository and sometimes in the form of a high enema of the milk of asafetida.

DR. EDWIN RICKETTS, Cincinnati—The after-treatment of many of these cases depends greatly on the ante-operative method. I wish to call your attention to the fact that if you will look into the history and life-work of Mott, of New York, and Blackman, of Cincinnati, and take into consideration that they were rapid operators, I am sure that many valuable lessons can be learned from these men. Blackman amputated the hip-joint in 28 seconds. I want to say to you that recently I saw a patient under an anesthetic 20 minutes while the operator was washing his hands. I object to this because it has a most damaging effect on the after-treatment of these cases. In regard to the closure of the abdominal incision, my friend Stone had been taught the lesson of the through-and-through suture and he departed from it only to come back to it again. I have never departed from it because you can not improve on the through-and-through suture. Put your sutures in alcohol instead of hot water and you will have very few stitch abscesses. Over-training is over-doing. Over-doing in the after-treatment of these cases means to lessen your patient's chance. Do your work well while you are doing it. The best men we have are the rapid operators. The men who give their time to this special work and do nothing else are the rapid operators. Any man who takes up 30 minutes of time for an ovariotomy is not worthy of the name of specialist. Ten minutes is long enough when there are no adhesions. Many operations are done in 45 minutes when 15 minutes would be amply sufficient.

Digitalis is a much over-estimated remedy, so, too, is nitroglycerin. The old-fashioned remedy, strychnin, can not be improved on.

Dr. F. F. Lawrence, Columbus—So far as the lives of our patients and the reputation of the men of our section are concerned, this is one of the most important papers we have heard. The remote as well as the immediate results depend more on proper preparation of our patient before operation and judicious after-treatment than on anything else. Many of the renal complications following laparotomy are simply due to the conditions present which compress or irritate the bladder and ureters. We frequently find albumin. This may be relieved if prior to the operative work you fill your patient full of hot water for two or three days. In reference to the length of the operation and the amount of manipulation of the viscera, I wish to say that nausea, vomiting, shock, peritonitis, septic infection and obstruction of the bowels occur exactly in inverse proportion to the rapid manipulation of the operator. Infection will be in relation to the length of the incision. The peritoneum is a lymphatic covering; the upper part has the greater number of stomata and the lower part the lesser number, hence, we have so few cases of infection following tubo-ovarian abscess. Open the abdomen wide, soil your fingers and get them in contact with the upper part of the peritoneum and your patients will surely have sepsis. Short incisions, little manipulation, rapid work, short anesthesia are the keynote to the entire situation. Dr. Ricketts emphasized short anesthesia. The man, who will start his anesthetic before he begins the preparation of himself, is exposing the patient to unnecessary risk. I prepare myself before I have the patient anesthetized, and even prepare the sutures first. Whether we have stitch abscess depends on how the sutures are tied and the sterile condition of the material rather than on whether it is silkworm-gut, catgut or anything else. Stitch abscesses are more frequently due to devitalizing the tissue within the stitch by too tight tying than from infection.

The use of morphin has been emphasized. If pain demands it, give it before your patient comes out from under the anesthetic. The cases in which we will have infection are those brought into the hospital to-day and operated on to-morrow. The greatest question is when and how to operate.

Dr. C. L. Bonifield, Cincinnati—There are two or three points which I wish to refer to. Patients after abdominal section suffer a great deal from thirst, which is very much increased if purgation, preparatory to laparotomy, is done with salts. I think it is a great mistake to do this. This intestinal tract should be thoroughly clean, but other agents than the saline should be used to accomplish this. I favor the compound extract of coloeynth for this purpose. I also urge my patients to drink water freely for two or three days prior to the operation. Then they do not suffer so much from thirst and are better able to stand the loss of blood during the operation.

Regarding the use of morphin, we have been taught not to give it under any circumstances. We all realize that this was an exaggerated statement. It is a good thing to impress the fact on us that morphin is dangerous. It has been my custom for two or three years, when patients are suffering, are restless, can not sleep, to give a rectal injection of phosphate of codein and chloral. The combination acts better than either drug alone. Codein relieves pain and chloral quiets the nerves. It may be objected to by some that chloral is a depressant, but I have never found it so in this connection. If the patient is robust I give 3 grains of codein and 30 of chloral. This dose may be repeated in a few hours, but I rarely have to do so. Of course, we are more apt to have pain when the operation includes the removal of appendages that are nearly normal.

As to stimulants, Dr. Stone spoke very wisely on that subject. Because the patient is operated on is no reason for giving stimulants. If the patient requires stimulants, give them, but not otherwise. If you give stimulants when not needed, you have nothing to depend on when you do need them.

As to suture material, I wish to advocate the layer suture. I am surprised to hear it said that we have no catgut at present that we can depend on. I have been using it for a number of years, but do not remember the formula how the hospital prepared it. I have used it in all sorts of cases and have never had any trouble. My experience leads me to believe that the trouble which has caused operators to return to through-and-through suture comes from not using enough sutures and the presence of serum or capillary hemorrhage between the layers. That has led me to adopt two measures to prevent it. The peritoneum itself is particularly apt to be separated from the tissue immediately above it. After closing the peritoneum, I carry the next row of sutures through the muscular tissue and in every alternate stitch I take a little bite of the peritoneum, so as to maintain it in contact with overlying structures. I close the fascia and if the subcutaneous fat is thick I put in an extra row of catgut here. The skin is closed with a continuous subcuticular suture of silkworm-gut.

Dr. Ricketts has emphasized the necessity for speed in operating, but the necessity for speed is not so great now as when the illustrious Blackman, the most noted surgeon west of the Alleghenies, performed his operation. We have more perfect asepsis than he had and therefore we do not have to make up for that deficiency by speed, as he had to do. Asepsis should never be sacrificed for the sake of speed in the present state of our knowledge.

Dr. P. A. Harris, Paterson, N.J.—Much stress has been laid on the condition known as "stitch-hole abscess" by the various gentlemen taking part in this discussion. I would advise not to allow the first dressing to remain more than six or seven days without lifting it up and examining the incision. I not only look at it, but I palpate it to see if there is any place where there might be an accumulation of serum or where an infection may have started up. I have also made it a practice to inspect the wound every second day after the removal of the first dressing, until about the twelfth day, for the purpose of promptly discovering any collection which may be forming. You may find a little accumulation of fluid or pus, and if you do, it is well to take a pointed trocar, probe, or tissue dissector and open the incision at that point and let the fluid out. In a certain number of cases, in which the patient has not complained and where there has as yet been little or no rise in temperature, a small quantity of serum, blood or pus may thus be discovered and evacuated, and the extent of the suppuration limited.

Dr. A. H. Goelet, New York City—I would like to say a word in regard to the preparation of silkworm-gut; if it is boiled for half an hour in a 1 per cent. solution of lysol it becomes just as pliable as catgut. It is, of course, preserved in the same solution until used.

Dr. G. T. Harrison, New York City—I wish to mention one very important complication that occurs after laparotomy, namely, ileus. The best way to avoid that is to handle the intestines as little as possible. It is one of those things where prevention is a great deal better than cure. Our cures are very few, but we nearly always have it in our power to prevent this complication. I do not know anywhere in the whole domain of surgery where the surgeon's sagacity is put to a more severe test than where this complication occurs. I had such a case not long ago, and the question was what to do? I decided not to open the abdomen, and the patient died. I believe now that I made a mistake, as I think it best to open the abdomen again, as a cure may be effected by ascertaining the cause of the pathological condition.

Dr. C. C. Thayer, Clifton Springs, N. Y.—I think it is unfortunate, as well as unphysiological, to give remedies when preparing the patient which have a tendency to reduce the fluids of the body. The compound licorice powder is better than any saline compound. The fluids of the body are needed during the operation and during the convalescence. In regard to sustaining the patient, it has been said that strychnin is one of the most important drugs. I would also mention oxygen when there is a tendency to collapse. We should never operate

on a patient without having a can of oxygen and plenty of strychnin on hand.

In preparing a patient for abdominal surgery the alimentary tract should be not only evacuated, but disinfected, and functional disorders corrected. We should remove a pathological, and secure a physiological, condition by beginning earlier the process of preparation, making it more thorough, and thus avoiding many complications which often arise from th neglect. It is unphysiological to use, just before a surgical operation, evacuants that tend to reduce the fluids of the body. Compound licorice and castor-oil are among the best intestinal evacuants, with which some disinfectant or germicide may be happily combined. Any preliminary disturbance, general or local, should be overcome, rather than added to the effects of the operation. The stomach and bowels being set in order and the colon thoroughly washed just previously, best prepares the patient, not only for the operation, but for the convalescence. In regard to restoratives, as whisky is often worse than useless, and digitalis, strophanthus, nitroglycerin, and ammonia are often unreliable, strychnia is the most potent motor and vasomotor stimulant and must stand at the head of drug restoratives in surgery. Oxygen is far superior to all, being the quickest, safest and surest. If used intermittently, with the anesthetic, collapse may be averted. We never think of using anesthetics without a cylinder of oxygen ready at hand.

DR. GEORGE J. ENGELMANN, Boston—I have lately studied the pulse and find a normal variation of from 30 to 40 beats; this teaches us that if we are to understand and appreciate danger-signals we must study the pulse of the individual patient beforehand, and this is too generally neglected. I have been surprised that a normal, thoroughly healthy pulse may drop to 68 or 60 and may rise to 94 after taking food, that it may vary 20 beats in different portions of the body and more with emotion. I want to call your attention to a suture with which I must confess I have had no practical experience. You may be familiar with it. It is advocated by Jonnesco, a brilliant young surgeon of Bucarest, who uses an aluminum or silver wire suture. The suture is not buried, yet it is a tier suture and helps sustain and hold the various layers in position. The lowest suture, including the peritoneum, is placed two centimeters from the edge of the incision and goes entirely through. The suture which takes in the next layer and all above it is a little nearer the incision, and so on. No suture is tied, every wire is laid out until all are in place so that the tissues are not distorted and the field is a normal one. When all are in place they are tied, beginning at the highest and nearest one. Dr. Davis' idea of using a little silver tube is a good one and worthy of consideration.

DR. F. F. LAWRENCE, Columbus—Sutures should be taken out on the seventh day. I never leave sutures in longer than one week, as there is absolutely no use of their being there after that time.

DR. CHASE, closing the discussion—I am confident that our individual experience should to a large extent control us in our work, although we should not be entirely oblivious to the experience of other men, nor underrate what they do. We must be guided largely by our convictions and individual opinion. By so doing we shall retain all that is best in our own method. We all deprecate rapid changes, jumping from one extreme to another in the work we do. Unless it is an emergency case, there is no excuse for operating until we are ready, no matter whether it takes one week or six weeks. There should be no hesitancy on our part to apply honest criticism, as it tends to good results and we also by so doing, affirm the reasons for our belief.

Experience has taught us that there are patients who are extraordinarily susceptible to morphin, a single dose producing nausea, etc. I can admit that anodynes must be given in some cases, but not as a routine practice. We get just as much benefit from codein given hypodermically in most cases as from morphin. If we increase the dose of codein we get the same good results as from morphin, minus the bad effects. I think when it comes to giving stimulants, a great deal of care should be exercised. Much depends on circumstances and we should thoroughly understand the physiological effect of drugs. No two of them act alike and the therapeutic result, to a great extent, depends on the condition of the patient. It is my practice to fortify my patients by strychnin, but not unless they need it. If there is great nervous depression, there is nothing that will compare with strychnin, but I am sure that Dr. Ricketts and others of my friends here, have given so much strychnin in an individual case that no more could be given. Then spartein or caffein can be given, but they are evanescent in their effect. The conditions under which digitalis should be given are those in which there is diminished arterial pressure attended with vital depression.

THE VALUE OF BLOOD EXAMINATION FOR DIAGNOSTIC PURPOSES.*

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If we pause for a moment to consider what a valuable aid to diagnosis, differential diagnosis and prognosis is afforded by the microscopical examination of the blood—in itself a comparatively simple procedure—we can not fail to wonder at the indefiniteness of information to which most medical men must confess in regard to the subject. The cause of this shortcoming, however, need not be far sought, and lies in the fact that it is only within a short period that the medical institutions of this country have provided instruction and laboratories for study in this important branch. Indeed, the entire subject is still in its infancy of investigation.

There are many important and practical instances in which this method lends a valuable aid in the establishment of accurate and scientific diagnosis, as well as assists in determining prognosis. Little is required in the way of apparatus, and only a moderate degree of skill is necessary to master the technique.

DISEASES IN WHICH BLOOD EXAMINATION IS ESSENTIAL TO DIAGNOSIS.

1. Chlorosis. In this disease, by numerical count, there is found to be an oligocythemia; the number of red cells average, however, as high as 4,000,000 per cubic millimeter, although in many cases the count is much lower. There is also an oligochromemia wherein the cells look paler and smaller than normal. The presence of poikilocytes, microcytes and macrocytes is detected, and in very severe cases a few nucleated erythrocytes of the normoblast variety are found; in such cases degenerative changes also occur in the red cells, such as a tendency to accept more than one stain, the appearance of hyaline spaces in the cells, the loss of the entire hemoglobin and the absence of the tendency to form rouleaux. The blood plaques are increased. There is no leucocytosis, but a lymphocytosis occurs at the expense of the polymorphonuclear forms. In the average case, by test, the hemoglobin is found to be about 40 per cent. of the normal, thus causing the color-index to be considerably less than normal.

2. Secondary anemia. Here we find a decrease in the number of red cells and in the percentage of hemoglobin, which diminish more in proportion to each other than in chlorosis, though the hemoglobin always suffers more severely; the number of erythrocytes sometimes remains approximately normal, while the hemoglobin is often sufficiently affected to cause the color-index to descend as low as that of chlorosis. According to the severity of the disease occur microcytes, macrocytes, poikilocytes

* Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

and other degenerative changes in the red cells, normoblasts and megaloblasts. A leucocytosis is usually present.

The following two points, characteristic of the blood of children, should be borne in mind.

A leucocytosis, polycythemia and increased percentage of hemoglobin are characteristic of the blood of the new-born, but gradually disappear, the last in fact reaching below the normal within a very few weeks, where it remains during the rest of childhood. Any influence which retards the development of the child—e. g., rhachitis—has a like effect on the blood, thus causing a leucocytosis, of which a large percentage are lymphocytes, and the appearance of nucleated erythrocytes without necessarily the coexistence of an anemia.

Again, in the anemias of infants and children the red cells are destroyed to a greater extent, and degenerative changes are more marked than in like cases in adults. Nucleated erythrocytes, especially normoblasts, are more frequent, and often show mitotic figures and fragmentations of their nuclei, and, finally, myelocytes are more common than in anemias of corresponding severity in adults. In very severe infantile anemias a condition is encountered in which the white cells present all stages of degeneration, no two looking alike.

3. Pernicious anemia. In this there is a marked oligocythemia, the number of red cells averaging about 1,000,000, or slightly over, per cubic millimeter. The hemoglobin is reduced to an average of about 25 per cent., thus causing each erythrocyte to contain an increased amount of hemoglobin, or, in other words, the hemoglobin-index to be greater than one. The existence of microcytes, macrocytes, degenerative changes of the erythrocytes and of nucleated erythrocytes of both normoblast and megaloblast type, is observed; and the presence of the giant nucleated cell in greater numbers than that of normal size is a characteristic of this disease. The number of blood plaques is diminished. Finally, there is no leucocytosis, or even a hypoleucocytosis, the proportion of lymphocytes, however, being increased. Not all cases of pernicious anemia observed in infants have shown a color-index increased above the normal, some have shown a slight leucocytosis.

4. Leukemia—myelogenous. The characteristic feature of the blood in this disease is an enormous leucocytosis, amounting to an average of 400,000 white cells per cubic millimeter, of which myelocytes constitute one-third or more. The lymphocytes are increased in absolute number, but decreased in percentage in proportion to the normal, and the same is true of the multinuclear type, which show signs of degeneration such as loss of neutrophile granules, paleness, irregular shape and hydrophic swelling of the nuclei, etc. The percentage of eosinophiles is slightly increased. The large mononuclear leucocytes are characterized by the absence of ameboid movements, and Flemming and others have called attention to karyokinesis occurring in the leucocytes, especially in the form just mentioned, namely, myelocytes. The changes of a secondary anemia, of a severe type, always occur, including diminution of the hemoglobin, oligocythemia, microcytes, macrocytes, degenerative changes, normoblasts and megaloblasts; the normal-sized nucleated erythrocyte is especially numerous in this disease, and frequently shows fragmentation of the nucleus.

5. Leukemia—lymphatic. Here, again, the characteristic of the blood is a considerable leucocytosis, averaging about 150,000 white cells per cubic millimeter, of which 90 per cent. are lymphocytes, the polymorphonuclear form being diminished in proportion and myelocytes very scarce. A secondary anemia, with all of its changes, co-exists, though nucleated erythrocytes are rare excepting in children. In diagnosing this disease from the blood examination it must be remembered that an extensive lymphocytosis may be the result of various causes in children.

6. Hodgkin's disease. This presents early only normal blood, and later the alterations of secondary anemia.

7. Anemia infantum pseudoleukemia. In this interesting affection the number of erythrocytes always falls below 3,000,000 per cubic millimeter, and sometimes as low as 820,000. Microcytes, macrocytes, poikilocytes and other marks of degeneration characteristic of severe anemia are in evidence. Nucleated erythrocytes are numerous, and many of the normoblasts show karyokinesis, which is a feature considered by Luzet to be characteristic of the disease. The hemoglobin suffers, as it does in any severe anemia. A leucocytosis invariably occurs, and is stated as varying between 40,000 and 114,000 cells per cubic millimeter. Some observers report the multinuclear variety as being particularly increased, while others state it to be the uninuclear forms which are principally multiplied. Von Jaksch found the number of eosinophiles decreased, while Luzet and Zappert report them increased.

8. Malaria. The important point here is the discovery of pigment, flagella and the plasmodium malariæ in the blood. A secondary anemia is regularly present, ordinarily marked by a reduction of the red cells, which is proportional to the diminution in the hemoglobin, causing the color-index to be about one. No leucocytosis occurs.

9. Relapsing fever. A microscopic examination during the course of the fever will reveal the presence of the spirocheta obermeieri, which is the pathognomonic sign here. An oligocythemia and an oligochromemia occurs during the paroxysm, but return to the normal in the apyretic period, and a leucocytosis follows the same rule. Large protoplasmic bodies resembling leucocytes, but of larger size, many of them containing fatty granules, are discoverable in the blood during the existence of pyrexia; finally, there must be mentioned the occurrence of free, dull-colored granules, and of fatty, degenerated endothelium, the latter from the blood-vessels.

10. Filaria sanguinis hominis. The finding of the parasite in the blood is the diagnostic point in this affection. An eosinophilia offers confirmatory evidence in suspected cases. A secondary anemia is an ordinary accompaniment.

And lastly, under this heading, let me call attention to the fact that, in certain cases, the finding of the causative germ in the blood has rendered the diagnosis of the following diseases positive: typhoid, tuberculosis, tetanus, ulcerative endocarditis, anthrax, grippe, glanders, septicemia, pyemia, pneumonia, and undoubtedly others which I have neglected to mention.

DISEASES IN WHICH BLOOD EXAMINATIONS ARE AN IMPORTANT AID TO DIFFERENTIAL DIAGNOSIS.

1. Chlorosis from secondary anemia. The differential diagnosis, by means of an examination of the blood, often presents great difficulty in these two diseases; for, while we are more likely to find normal erythrocytes among the small, paler ones of secondary anemia, and although the hemoglobin-index is apt not to be as low as it is in chlorosis, still the only feature that we can depend on is the occurrence of a leucocytosis, which is

pretty regular in symtomatic anemia, but absent in chlorosis.

2. Chlorosis from pernicious anemia. The reduction of red cells and hemoglobin is rarely as great in the former as in the latter, and the degeneration of the erythrocytes is more severe in pernicious anemia. The color-index is less than one in chlorosis and greater than one in pernicious anemia. Myelocytes and megaloblasts are regular features in pernicious anemia, but their occurrence in chlorosis is extremely rare.

3. Pernicious anemia from the anemia of malignant disease. From the anemia of malignant disease, as well as those that follow syphilis, typhoid fever and malaria of severe type, the following points serve to distinguish pernicious anemia: the large number of megaloblasts; the greater size of the erythrocytes, and the color-index greater than one; the absence of leucocytosis.

4. Leukemia from Hodgkin's disease. In the latter disease the blood shows, at most, a secondary anemia, which is easily distinguished from the blood of leukemia.

5. Leukemia from tumors of the spleen or kidneys.

6. Leukemia from tubercular, syphilitic or malignant adenitis. In 5 and 6, the blood examinations of the affections contrasted with leukemia do not show the changes of the blood of that disease.

7. Syphilitic from tubercular or malignant disease. As stated by Cabot, in adults a leucocytosis, marked by an increased percentage of young leucocytes and eosinophiles, points to a diagnosis of syphilis as against tubercular or malignant disease.

8. Typhoid fever from malaria. 9. Paroxysmal hemoglobinuria from malaria. 10. Pneumonia from malaria. In 8, 9 and 10, the finding of the plasmodium malariæ settles the diagnosis.

11. Malignant liver disease from other liver disease. 12. Puerperal sepsis from puerperal mania. 13. Renal or cardiac from bronchial asthma. In regard to 11, 12 and 13, according to the teachings of Neusser and his followers, an eosinophilia would point to the presence of the second as opposed to the first of the diseases in each couplet.

14. Hysteria and neurasthenia from many of the diseases which they simulate. The finding of normal blood where we could expect to encounter certain pathological changes serves readily to make the distinction here.

15. Gastric ulcer from gastric cancer. The occurrence of a digestive leucocytosis points to the former.

It is obvious what an aid may be rendered by blood examination in obscure abdominal cases, for the presence of a leucocytosis would point to: 16. Appendicitis as against typhoid. 17. Appendicitis as against intestinal, biliary or renal colic, or floating kidney. 18. Peritonitis as against tubercular peritonitis. 19. Malignant disease of the liver as against catarrhal jaundice. 20. Perinephritic abscess as against cyst of the kidney.

In doubtful pelvic cases the absence of leucocytosis excludes the presence of pus or hemorrhage, and, in general, the mere existence of a leucocytosis would suggest the first as opposed to the second of each of the following couplets: 21. Pneumonia and typhoid. 22. Pyemia or septicemia and typhoid. 23. Meningitis and typhoid. 24. Meningitis and brain tumor, lead encephalopathy, diabetic coma, sunstroke, narcotic or alcoholic intoxication. (Cabot.) 25. Pneumonia and uncomplicated grippe. 26. Scarlatina and measles. 27. Empyema or pneumonia and serous pleurisy.

In the last disease, however, there is usually a mild leucocytocis during the febrile period, but it is not as great as that of the contrasted affections. An important point is an increase in the leucocytosis as indicating a change from serous pleurisy to empyema. It must be kept in mind that serous pleurisy, as well as all other serous inflammations in children, causes such a high leucocytosis that this point can not be depended on as a mark of differentiation between serous and purulent inflammations in them.

To continue, the same sign serves to differentiate: 28. Serous pericarditis from cardiac dilatation or hypertrophy. 29. Osteomyelitis from neuralgia or "growing pains." 30. Malignant from benign tumors. 31. Purulent from catarrhal otitis media; as well as all suppurative from non-suppurative processes. 32. Suppurative processes from tubercular processes.

PROGNOSIS AS DETERMINED BY BLOOD EXAMINATION.

1. Pneumonia. In this disease the absence of leucocytosis in any but the mildest cases is a bad sign, and points toward a fatal issue; while its presence merely assures us that the system is reacting, but does not suggest the outcome.

2. Diphtheria. Here, again, the absence of leucocytosis in any but the mildest cases is a bad sign, and the degree of leucocytosis keeps pace roughly with the severity of the infection. Engel considers the presence of large percentages of myelocytes as characteristic of fatal cases, and Ewing finds the staining reaction of the leucocytes proportional to the severity of the disease.

3. Chlorosis. The prognosis, of course, is regularly good, but the chances of rapid recovery or the reverse depend on the severity of the blood-changes existent at the time treatment is begun. For instance, we can expect an early return to the normal, where the only change is a loss of hemoglobin, while the course would be proportionately slower where oligocythemia, changes in the shape and size of the red cells, degenerative changes, etc., are added. Neusser finds eosinophilia a favorable sign in chlorosis, as it shows an active regeneration of the blood, and, for the same reason, he considers it a good prognostic sign in the:

4. Anemia following hemorrhage. 5. Pernicious anemia. In this disease, too, Neusser states that the occurrence of an increased percentage of eosinophiles is a good sign. The prognosis, however, is always bad, and it can only be said that cases are not so rapidly fatal in which remissions occur, and in which the blood-changes enumerated above are not so severe.

6. Scarlatina and scarlatinal nephritis. Here, again, is eosinophilia a good sign, according to Neusser, while its absence is bad. The leucocytosis is proportional in degree to the severity of the disease in scarlet fever.

7. Appendicitis. In this inflammation, as in pneumonia and diphtheria, mild and very severe cases may show no leucocytosis. As Cabot states, an increasing leucocytosis may be the only thing to suggest an extension of the process.

8. Septicemia and pyemia. The occurrence of leucocytosis in these diseases follows the same rule as in several of the diseases already mentioned, that is, marked leucocytosis in most cases, and no increase in the leucocytes only in the mildest or in those cases in which the outcome is sure to be fatal.

9. Malignant disease. The recurrence of a leucocytosis which has disappeared with the removal of a malignant neoplasm indicates a return of the tumor.

10. Phthisis. Neusser points out that, in certain cases of this disease, some of the large uninuclear and multinuclear leucocytes contain perinuclear basophilic granules which, as the mark of a uric-acid diathesis—a tendency which is antagonistic to the development or spread of tuberculosis—suggest a favorable prognosis.

And, lastly, Neusser is also responsible for the statement that in deciding whether a case of hysteria, neurosis or psychosis would be benefited by castration, the presence of an eosinophilia suggests the affirmative.

DIFFERENTIAL DIAGNOSIS BETWEEN ABDOMINAL TYPHOID AND APPENDICITIS BY MEANS OF IODIN REACTION. REPORT OF A CASE.*

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VIENNA, AUSTRIA.

The clinical value of the iodin reaction of the blood has an established place among the clinical methods of examination since the investigations of Czerny, Livierato, Weiss and Goldberger. The following case will illustrate its value in the differential diagnosis between purulent perityphlitis and abdominal typhoid:

The patient, H. N., is 9¾ years old. The mother died of pulmonary tuberculosis. A younger brother died of caries pedis. Two other sisters and the father of the patient are in good health. The child has had, until now, nothing but rubeola; the present illness began the last week in November, 1899. On the 25th of that month the child was troubled with cough, and on the 28th had a temperature of 38.3 C. She also complained of abdominal pains, which appeared spontaneously, like colic, and pressure on the abdomen did not seem to intensify the same. Along with it watery stools occurred, alternating with constipation, and no vomiting.

Status præsens: The child is well-developed; its bones show slight rhachitic thickening; the cutaneous surface shows a marked pallor; moist, mucous membranes appear slightly injected. The pharynx shows nothing abnormal; the tongue is reddened, and has a slight whitish coating; the ears are clean. On the left submaxillary region a glandular swelling, of the size of a pigeon's egg, and not sensitive, is found. In the region of the submaxillary joint a deep shining atrophic scar is found. The sensorium is clear. The temperature 38.3 C.; the lungs have a dry catarrh, with harsh breathing, and numerous dry rhonchi. Heart dulness is not increased; the sounds are clear and regular. Arteria radialis is soft, well filled, with normal tension and frequency of 130. The abdomen in the neighborhood of the thorax is soft, not tense, and somewhat tympanitic; at the navel it is sensitive on pressure. Constipation exists; the liver is not enlarged. Dulness of spleen begins in the eighth intercostal space, in the middle axillary line, and extends backward to the scapular line, and forward to the border of the ribs; it is not palpable. The urine is free from abnormalities.

Calomel was given in doses of .1 gram. The diet consisted of milk and soft moist food. On November 29 her temperature was 38.7 C., and pulse 130. The abdominal pains were increasing; three liquid stools occurred. Tannalbin, .3 gram, was prescribed. On the 31st, no change was noticed.

On December 1, severe subjective symptoms of illness are apparent. Temperature is 37.8, pulse 120; sordes appear on lips; the tongue has a white coating; the diffuse catarrh over the lungs continues. The splenic tumor is enlarged and extends over the border of the ribs, and can be palpated. Constipated condition remains unchanged from the 2d to the 5th.

December 6, the temperature is 38, and pulse 120. The splenic tumor becomes plainer; in the left hypochondrium five to seven rose-spots are visible. Abdominal pains continue; one stool daily, slightly bile-stained. The urine gives a positive diazo-reaction. Blood examination shows a positive Widal reaction, in the dilution of 1 to 50 in one-half hour. A specimen stained with the iodin gum solution does not show an increased leucocytosis; one-half of the leucocytes show a positive and diffuse reddish brown stain, and an iodin sensitive deposit, which is oak-shaped. Extracellular they are single and in masses of reddish brown granules.

December 7, no change. On the 8th, in the ileocecal region there is a diffuse resistance, hard to palpate, and slight meteorism; three liquid stools; roseola getting paler.

On December 9, the border of the tongue is cleaner, but a distinct fur in the center of the tongue; there is a resistance in the ileocecal region, pointing backward and downward. The pains are described as being in the umbilical region. The iodin reaction in the blood is positive; the same also of the Widal test 1 to 40. Treatment is tinct. opii, 15 drops; ice bag applied.

December 11, pain decreasing; temperature 37.2; no resistence on palpation; slight gurgling; one slimy stool; large doses of opium continued.

December 12, appetite and general condition good. Pain is in the ileocecal region on pressure; no fever.

December 14 to 20, general condition improved on a strict milk diet. Blood shows no iodin reaction, and no agglutination.

In this case there seemed to be at first a type of influenza with a form of bronchitis, and intestinal symptoms—constipation, diarrhea and colicky pains. When, however, typhoid symptoms, such as splenic tumor, roseola, typhoid tongue and lips, besides the Widal reaction 1 to 40, and also the diazo-reaction in the urine appeared, then the diagnosis of abdominal typhoid was made. The fever showed a remitting, subfebrile character, but it is well known that typhoid symptoms in children are either atypical or irregular. The diagnosis was questionable when the iodin reaction was found in the blood, and this latter showed the presence of pus. The existence of the tumor spoke against the existence of typhoid, and the disappearance of the same was certainly peculiar. Thus, it seemed that we were dealing with a suppurative local perityphlitic inflammatory condition, with adjacent peritonitis, which subsided in the course of a few days. With the disappearance of this tumor, the iodin reaction also disappeared. The rapid convalescence following the disappearance of the swelling, and the negative appearance of the Widal reaction speak against typhoid, so that the iodin reaction was the determining factor in establishing the diagnosis of suppurative perityphlitis as against abdominal typhoid.

The staining solution used was:

R.	Iodin sublim.	5
	Kal. iodati	1 5
	Aquæ destil.	50
	Muc. acaciæ ad consist. syruposam.	

Misce.

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DISCUSSION ON PAPERS OF DRS. BRANDEIS AND WEISS.

DR. JOHN LOVETT MORSE, Boston—The attitude of the profession at large seems to me to be rather different from that stated by Dr. Brandeis. A few years ago we knew little or nothing about the blood; now, too much is expected from blood-examinations. The paper of Dr. Brandeis is a very able contribution to the blood diseases of the adult, but what he said applies very little, it seems to me, to blood-examination in children. The blood diseases in children are decidedly dif-

* Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

ferent from those in adults, and the classification of the blood diseases of adults does not apply in the differentiation of the blood diseases of children. For example, it is only in older children that we have chlorosis, although the chlorotic type of blood is very commonly observed in all the anemias of children. In children, the hemoglobin is almost invariably lower than the red blood-corpuscles. I am extremely doubtful about pernicious anemia occurring in children. I am inclined to think that many of the cases called pernicious anemia in children are really examples of severe secondary anemia. The blood of secondary anemia in children is not the same as in adults. It may show any and all forms of anemia, mild and severe, with and without leucocytosis, and any or all of them may or may not be associated with enlargement of the spleen. This blood condition is not paralleled in adults. As to the importance assigned to different forms of corpuscles in childhood, I should say that the nucleated red cells, and others, do not have the same significance as in adult life. The tendency in children's blood is to revert to the fetal type with a preponderance of megaloblasts, and this reversion does not have the serious significance in children that it does in adults. We are not justified in making the diagnosis of pernicious anemia on the excessive proportion of megaloblasts in children.

The number of leucocytes and their proportions are very different. The increase in the number of leucocytes is very much greater in children than in adults, under similar conditions and is not of the same significance.

As to the count of the white cells, I think that it is one of the most important parts of blood diagnosis. To be of use however, it should be used intelligently on broad general principles. It is not the absolute count that is of value. It is the fact that some diseases have a leucocytosis, while others do not, that makes it useful. In making the diagnosis between two conditions, if one of those conditions has a leucocytosis, and the other does not, the blood count helps; if both conditions have, or do not have, leucocytosis, the blood count does not help.

Dr. Brandeis stated that there was slight leucocytosis in serous pleurisy. For the last two years I have had counts made of the white blood-cells in every case of pleurisy in my wards every day, and there has not been any leucocytosis in any case. The blood count in these cases appears to be of no use whatever as to the amount of fluid or as to whether it is increasing or diminishing. A possible explanation is that the great proportion of serous pleurisies are tuberculous, and, as is well known, pure tuberculosis does not show a leucocytosis.

DR. LOUIS FISCHER, New York City—I thoroughly agree with Dr. Morse regarding the care that should be bestowed in making the diagnosis, but I think he will agree that if we have a case showing a series of symptoms of typhoid fever, and the spots are not defined and the spleen is not enlarged, and other important signs and symptoms are absent, it is well to resort to other diagnostic tests, such as the Widal and the Ehrlich reaction. I am very sorry that the paper of Dr. Weiss has not brought out a larger discussion, for the paper is the result of a very large amount of labor and consideration, and has been very much quoted abroad. Dr. Weiss certainly does not wish it understood that the diagnosis of perityphlitic abscess should be made by the examination of a drop of blood solely and singly, but, given a child showing a series of symptoms corresponding with an appendicitis, and added to this there is a glycogenic reaction of the blood, this last reaction would strengthen the opinion that there was present a suppurative process. I have been greatly impressed with the remarks made by Dr. Morse regarding the great number of leucocytes existing in children. I believe the paper of Dr. Brandeis has been presented with a view to bringing out the opinions of those present concerning the necessity for more frequent resort to blood-examinations. I know that in hardly one case in ten of those seen by me in New York City has a blood-examination been made, although there are decided reasons for utilizing this aid as a valuable diagnostic adjunct.

DR. EDWIN ROSENTHAL, Philadelphia—I should like to ask Dr. Morse if, in the examination of blood for leucocytosis in typhoid fever, the differential diagnosis could be established when other suppurative conditions besides the Peyer's patches, as for example, of the bile duct, were present, and what influence such examinations would have on the treatment.

DR. MORSE—Pure typhoid does not have an increase in the number of leucocytes, and the presence of leucocytosis would point to some complication. The same is true of pure influenza. I do not wish to be understood as saying that I do not believe in the serum reaction or in examination of the blood for malaria, nor do I wish to be understood as wishing to diminish the value of blood examinations, but I do wish to insist on the point that the examinations of the blood should be made systematically and with a definite object in view, and not in a haphazard manner.

MODES OF INFECTION OF THE MAXILLARY SINUS.*

M. H. CRYER, M.D., D.D.S.
PHILADELPHIA.

There are various modes by which the maxillary sinus is infected, among them being diseased teeth, diseases of the ethmoid cells, of the frontal sinuses, of the sphenoidal sinus, syphilitic necroses, etc.

Figure 1.

The general impression in both the medical and dental professions is that the maxillary sinus is infected through diseased teeth more than from any other source. Some claim that three-fifths of the diseases of the antrum are brought about in that way. From study of the anatomical relations and from my clinical experience, I conclude this is a mistake. In order to demonstrate this more clearly, it is necessary that the anatomical relations of the maxillary sinus with the teeth and internal structures of the face should be thoroughly understood. The development of the teeth and face, with their great variations, should also be considered.

The development of the sinus begins about the fourth month of gestation by an invagination of the lining membrane of the nose, from the hiatus semilunaris into the body of the maxilla. From the time of the invagination until the eruption of the permanent teeth, the greater portion of the maxilla is occupied by the dental organs. As the invagination progresses the cancellated portion of the bone undergoes resorption. This absorption of the internal portion of

*Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

the maxilla is continued, in a variable degree throughout life, until in old age the walls usually become exceedingly thin.

As this process goes on the roots of the premolar and molar teeth are encroached upon by the walls of the sinus, until in many cases the points of the roots are covered only by a thin lamina of bone. Even this, in rare cases, may be lost, leaving only the muco-periosteum as a root covering. By the resorption of the bone and the enlargement of the sinus, it may occasionally be extended into the malar bone. The frontal and sphenoidal sinuses, the ethmoidal and other air-cells of the face are developed in a similar manner; i. e., from an invagination of the mucous membrane of the nose into various bony structures, through which the cells and sinuses derive their names. Therefore, these sinuses and cells are associated with the nasal chamber

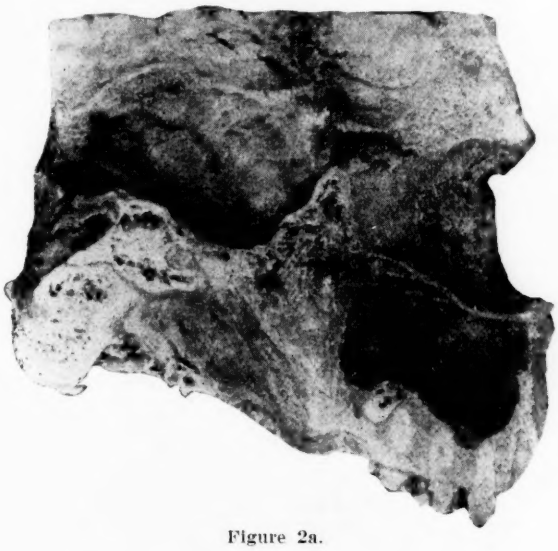

Figure 2a.

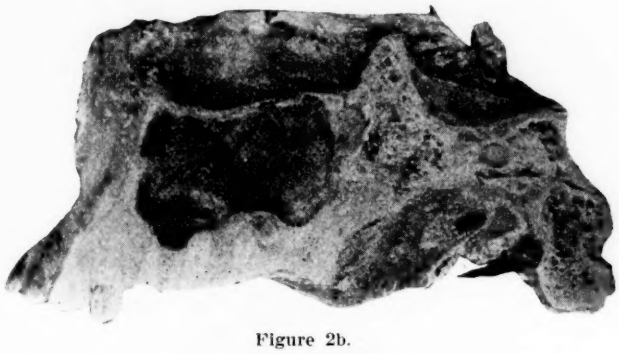

Figure 2b.

and consequently are closely related to each other. As one is affected by disease, the other is liable to become so affected in proportion to the relative position of the sinuses or cells to each other.

The teeth are developed by an infolding of the mucous membrane of the mouth. Diseases of the teeth have influence within the mouth, and diseases of the mouth affect the teeth, the causes of these diseases being more or less common to both.

In a paper entitled "Anatomical Variations of the Nasal Chambers and Associated Parts," read before this Section last year, and published in THE JOURNAL, Oct. 14, 1899, I gave some illustrations to which I here refer.[1] Fig. 5 showed a transverse section of both jaws from a skull of a seven months' fetus. The nasal chamber, the middle ethmoid cells, and the developing maxillary sinus also show to what extent the maxillary bones are taken up by the developing tooth organs.

In Fig. 6 of the same article, a good illustration is given showing how the floor of the antrum descends between the roots of the molar teeth, a condition much more common among the white race than among the negroes. I also said in that paper, that it is a generally admitted fact that pus or infected matter will pass in the direction of the least resistance; we might suppose by the close approximation of the apical foramina of the roots of the molar teeth that when an abscess is formed at their points, the infected matter would pass into the antrum instead of through the alveolar

Figure 3.

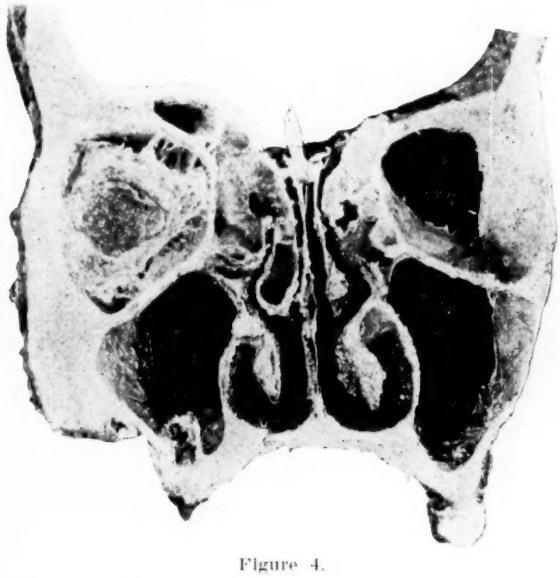

Figure 4.

process into the mouth. My clinical experience teaches otherwise, i. e., an abscess from an infected tooth usually makes its fistula opening into the mouth. The only reason I can give for this is, that nature usually protects apparently weak, though important points, in various ways. In this case I believe the muco-periosteum lining of the sinus takes up its defense, and through its osteoblastic layer builds and protects its walls against absorption and perforation.

In another paper, read before the Section in 1897, published in THE JOURNAL of April 2, 1898, I gave an illustration (Fig. 5 of that article) of the left superior maxilla, where, through the death and decomposition of a pulp of a molar tooth, there has been first irritation and constructive periostitis on the floor of the antrum, which has caused a thickening of the bone over the apex of the root. At a later period, suppurative inflammation has occurred, and an abscess has perforated the floor of the antrum.

The following illustrations are from new sections. The first few demonstrate the manner in which impacted or diseased teeth have or may have been a source of infection to the maxillary sinus, and through the sinus being infected, the other spaces belonging to the nose are also liable to become diseased.

Fig. 1 is a transverse vertical section of a face, made in the region of the first molar teeth. Besides other interesting points, it will be noticed that the crown of the canine tooth has penetrated the palatine surface of the mouth and that the root is within the anterior

Figure 5a.

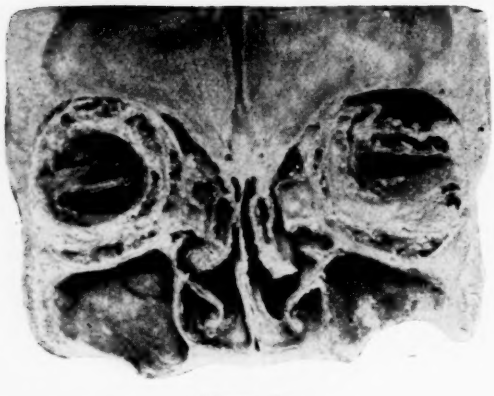

Figure 5b.

portion of the antrum. Before the dissection was made, the root was covered by a thin lamina of bone. Similar conditions are often found, not only with the canine tooth, but also with the third molars, and occasionally with other teeth, which often remain in such positions for years without giving any trouble whatever, until after middle life, when by natural resorption of the bone the crown and root become exposed within the antrum or nasal chamber. At such times these teeth are liable to cause irritation in the antrum. Occasionally impacted roots of various kinds are found in the floor or walls of the nasal cavity.

Fig. 2 is a sagittal section made through the middle of the orbit, the antrum and the roots of the molar teeth. The retarded development of the third molars has caused an irritation of the floor of the antrum, in the region of the palatine root of the first molar the lining membrane of the sinus has been elevated, which is due to the first molar tooth being abscessed.

Fig. 3 is a view of the floor of the left antrum and nasal chamber. It will be noticed in the middle of the antrum that there is a conical elevation with an opening in the center exposing the apex of a tooth.

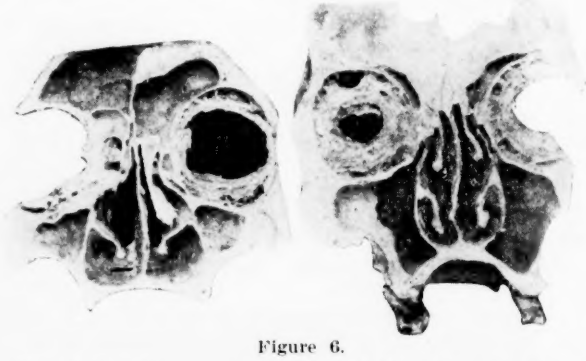

Figure 6.

Fig. 4 is a transverse section of the sinuses and nasal chamber. In the floor of the right antrum it will be noticed that the conical portion of bone covering an infected tooth has been cut through its center, exposing the end of the root in the infected region.

In these cases the muco-periosteum has endeavored to protect the invasion of the antrum, but at some sub-

Figure 7a.

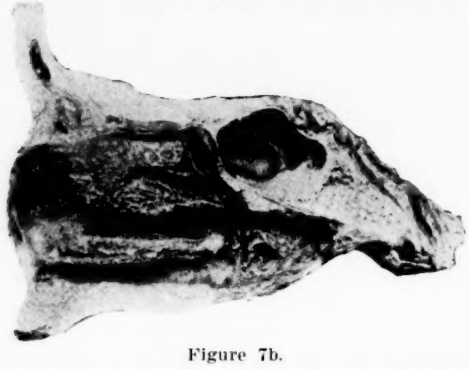

Figure 7b.

sequent time the bone has broken down and the antrum has become infected. From the foregoing illustration it is evident that the impacted and diseased teeth can and sometimes do cause infection of the antrum. Nevertheless, the writer believes that they are exceptional and not the general cause of the diseases of the maxillary sinus. The relation of the maxillary sinus with the nose and its various ramifications, with their com-

mon variations and malformations, more often cause infected antrums, and by these infections the teeth are subject to interference through their nerve and blood-supply being disturbed as they pass along the floor and wall of the sinus.

In the two papers the writer read before this Section in 1897-99, he demonstrated the great variations of the sinus, and of the cells and sinuses associated with the nose. He also demonstrated how the hiatus semilunaris could be closed by the enlargement of the bulla ethmoidalis, this enlargement being posterior to the osteum maxillæ, thus the fluids from the frontal sinus will be forced directly into the maxillary sinus, causing disturbance within this cavity until the fluids would pass out through the wall where the least resistance could be found. He likewise showed how fluids could pass directly from the frontal sinuses and ethmoidal cells into the antrum, even if the hiatus semilunaris were not obstructive. Variations were given in the individual skulls. Since writing those two papers, sections have been made, further demonstrating other variations not spoken of heretofore.

Figure 8.

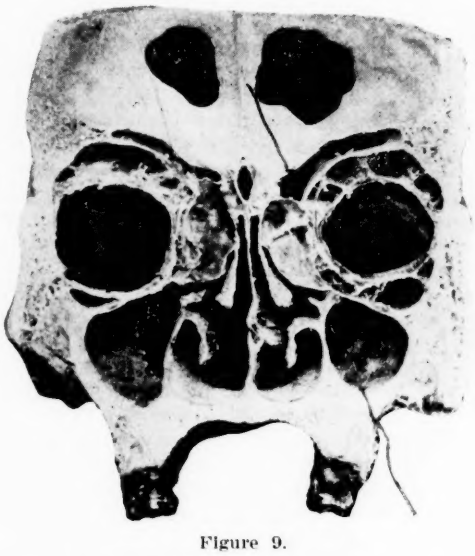

Figure 9.

Fig. 5 is from two transverse vertical sections made from different skulls. They show great variations as to the depth of the face, the size, shape and position of the maxillary sinuses: the one above having much smaller sinuses than the shorter-faced picture below. The septum is deflected and has a spur extending outward until it comes in contact with the inferior turbinal. The sinuses pass well down below the level of the center of the orbits. There is also a marked cell in the crista galli which opens anteriorly into the frontal sinus. The existence of a cell in the crista galli was demonstrated last year.

Fig. 6 was made in the same manner as Fig. 5, representing sections in two different skulls cut in about the same position. There is again a great difference in the depth of the face. The maxillary sinuses in the right picture are small and high up,

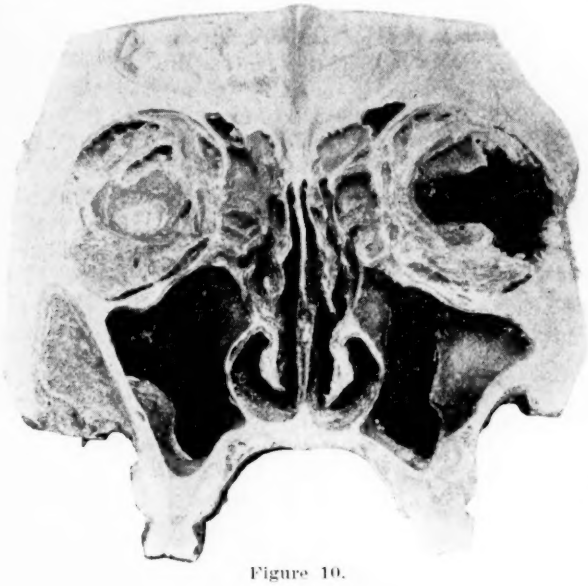

Figure 10.

Figure 11.

allowing the lower portion of the nasal chamber to extend outward over the alveolar process. In the left picture the sinuses are large and their floors extend downward below the floor of the nasal chamber, and pass over the roof of the mouth, leaving but a small nasal chamber. The one above gives a good illustration of the four meatuses and a partial fifth.

Fig. 7 is made from two sagittal sections taken from different skulls, showing variations in the depth of the nasal chambers. The one above gives a good illustration of the four meatuses and a partial fifth.

Fig. 8 is a transverse vertical section. The anterior cut is made in the region of the premolar teeth. It

will be noticed that the septum of the nose is deflected and the spur comes in contact with the right turbinal. The frontal sinuses are large, extending outward over the orbits. They also extend down below the middle of the orbit. Between the two frontal sinuses there is an interfrontal cell extending backward into the crista galli, which is shown in Fig. 9. It will be noticed that a wire passes from the right frontal sinus downward and is again seen in the antrum.

Fig. 9 is a posterior view of the same section as Fig. 8. It shows where the section has been cut vertically in the region of the second molar tooth. The frontal sinuses will be observed passing well over the orbits, and the cell in the crista galli is clearly shown. The inner surfaces of the anterior walls of the bulla ethmoidalis will be observed extending inward toward the middle turbinate bones, the wire marking the infundibulum, the hiatus semilunaris, and the osteum maxillæ into the maxillary sinus, the last named being small in proportion to the size of the skull.

Fig. 10 shows a section cut anteriorly to the second molar teeth. In this case the maxillary sinuses are almost cuboidal in shape and extend down below the level of the nose, and upward into the region of the middle ethmoidal cells. The inner walls are not straight,

Figure 12.

as they are in a typical skull. Beginning at the floor of the antrum, almost over the center of the dome of the mouth, the inner wall extends upward in a convex manner to the point at which the inferior turbinal projects into the nasal cavity. There is a direct communication with the anterior ethmoidal cells and the frontal sinuses.

Fig. 11 affords a good view of the skull of an aged person. The floor of the maxillary sinus, the nasal fossæ, and the lower border of the alveolar process are almost on a horizontal line. The left maxillary sinus extends upward until it passes into the frontal sinus. In the crista galli is shown a small sinus which extends forward into the frontal sinus, as shown in other figures.

Fig. 12 is an anterior view of a section cut in the region of the molar teeth. Between the orbits are the anterior ethmoidal cells, and also a sinus in the crista galli. It will be noticed that both antra extend upward and become common with the ethmoidal cells and the frontal sinuses.

These illustrations, as well as those shown in previous papers, demonstrate how great the variations may be in the nasal chamber, the maxillary, frontal and sphenoidal sinuses, as well as in the cells of the orbital process of the palate bone and the ethmoidal cells.

The treatment and surgical manipulation of disease in these regions will vary, of course, to as great an extent as the variations in the anatomy.

The writer believes that it is through the common communication between the frontal sinuses, the ethmoidal cells, and the maxillary sinus, that infection is generally conveyed to the antrum from the cells and sinuses above it, recognizing, at the same time, that the posterior ethmoidal and sphenoidal cells and the cells of the orbital process of the palate bone, can also infect the antrum by the resorption of the partition between these cavities. The writer also believes that there are more cases in which teeth are lost through diseases of the antrum, than cases in which the teeth are primarily diseased, causing infection of the antrum and associated cells.

DISCUSSION.

DR. E. S. TALBOT, Chicago—The members of the Section on Stomatology are quite familiar with the work of Dr. Cryer. The illustrations shown this afternoon are very interesting. From original research of the last twenty-four years, I can confirm the work here presented. Dr. Cryer, owing to his connection with the University of Pennsylvania, has a better opportunity for studying recent specimens than I have. My investigations have been made principally on the skulls. I have made an examination of about 20,000 skulls, and have seen just such conditions as the Doctor explains. I do not see how it is possible for any specialist to practice on the nose, throat and sinuses without a thorough understanding of the anatomy of the parts. The anatomy as laid down in the text-books is worthless so far as diseases of the nose and maxillary sinuses are concerned. Owing to the limited time, I will confine my remarks to etiology. The early races, such as the Indian and the Eskimo, rarely have these diseases. They are common with the higher races. To understand the causes of these diseases embryology and evolution must be studied by two different methods. The early races have protrusion of the face and jaws. A line dropped perpendicularly from the superciliary ridge demonstrates that the jaw extends beyond; the lower in evolution, the farther the forehead recedes from this line. With the advance of evolution the forehead protrudes, the jaws recede. A few years ago I made a special study of the evolution of the face. I visited every country in Europe and studied the people, not only the soldiers, policemen and cab-drivers, but also the individuals in public institutions, insane hospitals, prisons, etc. Most of the Latin races have protrusion of the jaws, but in the Scandinavian and English peoples, etc., the jaws recede and the forehead protrudes. In the examination of 5000 people in Stockholm I found 2 per cent. outside, 14.70 per cent. on the line, and 83.30 per cent. had jaws inside of this line. In the examination of 10,000 people in London I found about 83 per cent. of the jaws were located inside of the perpendicular line. In 3000 school children I found about 93 per cent. had jaws inside of this line, or some 10 per cent. more than grown people. About the same statistics obtain in this country. The rapid evolution of the facial angle is shown in the faces of the American negroes. In New Orleans, among the lowest type, 83.57 per cent. were found to present protrusion, 15.95 per cent. on the line, and 1.13 per cent. recession; in Chicago, 51 per cent. protrusion, 31 per cent. on the line, 16 per cent. recession; in Boston, 45 per cent. protrusion, 39 per cent. on the line, and 15 per cent. recession. There is one factor in this evolution. In the evolution of the face from childhood to manhood arrest of development of the face may take place at any period, since these tissues are transitory. If after the sixth week of fetal life there is malnutrition arrest of development of the face occurs. If at any time after birth a child should have any of the constitutional diseases, marked arrest of development of the face takes place. Among the criminal classes arrest of development of the face is often seen, either a hollowing out of the face or a

protrusion of the jaws, and it is in such cases that we have abnormal development of the jaws, frontal sinus and the maxillary bones. In regard to disease of the antrum from diseased teeth, I agree with Dr. Cryer in every respect, because I have noticed about 367 cases in which the death of the molar pulps has taken place. There is only about 2 per cent. in my practice of disease of the antrum from these conditions of the teeth. In an examination of 3000 skulls, which were broken so I could get into the antrum, making 6000 antra, there were about 21 per cent. with abscessed molar teeth. Of this number 6 per cent. discharged into the antra. The percentage of these diseased antra, therefore, as the result of disease of the teeth, is very small.

DR. GEORGE L. RICHARDS, Fall River Mass—This is the third time that I personally have had the pleasure of hearing Dr. Cryer before the AMERICAN MEDICAL ASSOCIATION demonstrate the anatomy of the antra and the other accessory sinuses, and I move that a vote of thanks be extended to him this year, as we did at Columbus last year, and at Philadelphia two years before, for the illustrations given us. Those of us who do much nasal work must become more and more alarmed every time he addresses us because of the anomalies he presents. I move that a vote of thanks be extended to Dr. Cryer, and also to Drs. Stout and Talbot.

SYPHILIS OF THE UPPER AIR-TRACT.

SOME REMARKS ON ITS DIAGNOSIS AND TREATMENT.*

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The present paper is based on observations of such syphilitic patients as I have had in my private practice during the last four years, some forty in number. No attempt has been made to figure out the percentage to total number of patients treated; the number is too small for such figures to have any value. No case of primary syphilis of the upper air-tract has been met. They must be quite rare, especially so if primary chancre of the lip be excluded from this analysis and we confine ourselves strictly to the upper air-tract. Secondary and tertiary manifestations are common, the areas most frequently involved being the pharynx and tonsillar region, the nose and larynx. The sore throat of the secondary stage is one of the most common of syphilitic lesions, yet in my experience is less often seen by the specialist than the tertiary. This condition is usually seen and treated by the general practitioner who is treating the disease as a whole, since it is one of comparatively slight discomfort and soon passes away. The upper air-tract lesions of the tertiary are sooner or later referred to the specialist, and not infrequently the first correct diagnosis is made by him. Most of my cases have been of the tertiary variety.

The primary chancre is usually found on the tonsil and soft palate. Buckley reports 307 cases of chancre of the tonsil out of 9058 cases of syphilis, and Schadek found 34 cases of chancre of the tonsil out of a total of 68 cases of extragenital chancre. The lesion is an indurate ulcer, and can be so slight as to escape notice. Students of Hajek's clinic in Vienna will recall a case of primary chancre of the nose he was wont to describe. The victim was a physician who had examined a woman per vaginam, not knowing at the time that she was syphilitic; subsequently he picked his nose with the finger and inoculated himself with syphilis, the insufficiently cleaned finger nail carrying the virus. Dr. W. Freudenthal, of New York, has observed a similar case. The lesson from this is obvious, and the physician in all his relations to syphilis must never forget that it is possible for him to become infected. Primary affections of the soft palate and tonsil are mostly from pipes and drinking cups, but have doubtless also occurred from congress per os.

The secondary manifestations occur in the upper air-tract from three to nine months after the primary lesion, and are at first those of a simple catarrh with no particular diagnostic characteristics apart from the history, except that recovery is much slower than in ordinary simple inflammation of the region. This stage is usually passed unnoticed by the physician unless the patient is under treatment for other syphilitic lesions. Following this, appears the mucous patch; it involves the sides of the mouth, tonsils and faucial pillars, pharynx, nasopharynx, nose and larynx, and base of the tongue. They appear as slight elevations of the mucous membrane, flat, round or oblong in shape, from 3 to 7 mm. in diameter, and grayish-white in appearance, looking as though the surface had been lightly touched with nitrate of silver. If the superficial epithelium is denuded, the covering of the patch will be a thin, yellowish mucopurulent one. When the tonsil is affected it is considerably swollen and has a boggy appearance. Some difficulty in swallowing is complained of, and little pain. In one of my cases one tonsil was greatly swollen, the other slightly, and the patient stated that previously there had been no tonsillar enlargement whatever; he sought relief from a specialist because his sore throat had lasted five weeks without improvement. A history of a "soft" chancre three months previously was obtained and improvement under appropriate treatment was immediate. A sore throat, or laryngeal, or pharyngeal irritation coming on without apparent cause, lasting for weeks without improvement, with the mucous surface of a coppery glazed look, and covered with a thin secretion, is to me very suggestive of a secondary syphilis even in the absence of any confirmative history. It can be premised that an angina lasting longer than four weeks, and in a practically stationary condition, may safely be considered as probably syphilitic, especially so in the absence of any sufficient cause. When the mucous patch is on the surface of the pharynx, buccal surface of the tongue or soft palate, it is less likely to be seen by the specialist than when on the tonsils or palatine arches. When in the nose it will usually be entirely overlooked unless the person seeing the case examines the nose as a routine measure. I have not found enlargement of lymph-glands a very reliable sign by itself alone, though confirmatory. It is more apt to be an accompaniment of the secondary, is occasionally in the tertiary, and may be present in hereditary. More cases of enlarged lymphatic glands are non-syphilitic than syphilitic. Occasionally one will be in doubt between this stage and the tertiary, and some authors, as Schrötter, describe the manifestations of syphilis only and do not divide the upper air-tract lesions into stages. In one of my cases I was much in doubt as to whether I was dealing with an ulcerative mucous patch or with an ulcerative gumma. There was one swollen edematous cord and thickened papillæ at the base of the tongue, while the pharynx was as above stated. He improved under mixed treatment, so the exact stage was a point of no special import. The treatment of this stage is the general treatment of the disease. Beyond keeping the surfaces absolutely clean, I do not believe that any local treatment materially in-

*Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

fluences the disease. I apply a weak solution of nitrate of silver, order an alkaline wash and prescribe mercurials, and sometimes iodid of potassium as well. Hydrargyri protoiodid has been my mainstay in doses of ¼ grain, but latterly I have been using mercury by inunction. This has always been recommended by European writers, but has not been used as extensively in America owing to the disagreeableness of the treatment. In no other way, however, is the system so rapidly brought under the influence of the mercurial. One dram is rubbed in every other day for two weeks and then a cessation for a week; then begin over again, lengthen the interval as symptoms will allow, watch for salivation and keep the mouth very clean. Omit when salivation demands, though a moderate amount of salivation is readily borne.

The manifestations of the tertiary stage appear from three to fifty years after the primary lesion; in two of my cases, thirty-five years had elapsed without symptoms, during which time healthy children and grandchildren had been born. Owing to the long time which has elapsed since the primary lesion the symptoms are frequently wrongly interpreted or entirely overlooked. The patient himself has frequently forgotten about the original trouble, or at least places no causative relation between the two, and in women they may never have known what the original cause was. Syphilis is a disease whose past or present it is usually desirable to conceal; hence all histories are in the main apt to be unreliable, and a diagnosis should never hang on the presence or absence of a satisfactory history, but should be made on the symptoms as positively as though a clear history were obtainable. Moritz Schmidt says: "It is sufficient when the physician has recognized the affection. The knowledge of how it was obtained does not hasten the healing." Nevertheless, I always try to obtain a history.

In typical cases the diagnosis is clear enough; in others it may be very difficult, due to the lapse of time since the primary sore and to the well-known trait which syphilis has of simulating nearly every one of the more chronic affections of the body, no part being exempt from its ravages. I have elsewhere reported a case of perichondritis of the larynx where a history of syphilis thirty-five years before was obtainable, where rapid improvement took place under large doses of iodid of potassium. The final course and the histologic examination showed the perichondritis to be carcinomatous. It is not at all improbable that both conditions were present. A syphilitic person is as likely to suffer from carcinoma or tuberculosis as any one else, in fact more so, since the syphilitic condition lowers the powers of bodily resistance. The early manifestation of the tertiary is the formation of the gumma, a round-celled infiltration of all grades of severity and affecting the superficial and deep layers of the mucous membrane, elevated above the surrounding tissue and later breaking down in the center from insufficient blood-supply. The periglandular tissues and the vascular tissues are pressed upon, their caliber markedly diminished and an endarteritis obliterans set up. The extent of the gummatous deposit and the rapidity of its destruction are an index of the virulence of the virus. No portion of the upper air-tract is exempt from the gummatous deposit. I have observed it principally in the pharynx and nose, and in nearly every case ulcerative changes have begun before the case has come under observation. In the nose the gumma attacks the septum at the junction of the bony and cartilaginous portion, ulceration soon follows, and destruction of a greater or less portion of the bony and cartilaginous wall with necrosis of the bone, and accompanied frequently by an abundant formation of foul crusts. This feature is frequently a marked one, and in an early stage may be mistaken for atrophic rhinitis. The resulting destruction may result in saddle-nose, but if the side walls are uninjured, saddle-nose will not take place, as this condition is brought about only when the interstitial tissue that binds the cartilage and skin of the nose to the bone is involved in the syphilitic process.[1] I have a patient now under observation with complete destruction of the anterior one-half of the bony septum and of a large part of the cartilaginous as well, but none of the saddle-nose deformity. Primary infection in this case occurred thirty-five years previously. In addition to the destruction in the nose there was a small gumma on the tip of the tongue. This case was at first supposed by me to be one of atrophic rhinitis, but the removal of a piece of necrosed bone from the septum confirmed the diagnosis of syphilis. It may be stated as practically an absolute rule that necrosis of the bony framework of the septum, in the absence of history pointing to phosphorus or some irritant poison as a cause, is of syphilitic origin. I was once led astray by another case simulating an atrophic rhinitis. A young woman, previously under care of two physicians, was referred to me by one of them for atrophic rhinitis, and told me in answer to inquiries that he was very sure that syphilis was not a factor in the case. I treated it as a case of atrophic rhinitis without making much headway. There was a perforation in the cartilaginous septum and some necrosis of the edge of the bony septum, and many foul crusts. After a while I began to get away bits of necrosed septal and turbinal bone, and a saddle-nose appeared. I sought for a syphilitic history, asked some leading questions and began an antisyphilitic treatment. In the midst of this she became pregnant, was delivered of an apparently healthy baby and disappeared from observation. Later she returned, I continued antisyphilitic treatment and told her what the trouble was. She again disappeared from treatment, but returned one day with a gumma at the margin of each ala and with the process attacking the skin and cartilage between the two. This extension does not agree with the observation of Bosworth that syphilitic disease shows a marked hesitancy to transgress anatomical boundaries. She stated that she had absented herself because she was angry at my telling her she had syphilis, but the conditions becoming so desperate she had again sought me that I might save the external nose if possible. The process rapidly subsided under the mixed treatment in large doses, and the external nose and alæ were saved from destruction. In this case valuable time was lost by my allowing an absence of history to stand in the way of a proper diagnosis.

In a young man referred to me for septal operation I found a broken-down gumma and almost complete ulceration through the septum at junction of the cartilage and bone. I easily obtained a history of a syphilis which the patient supposed was cured. Operation was postponed until several weeks of syphilitic treatment could be carried out, and healing was prompt. Operations on these cases during the active stage of a gumma do badly and healing does not take place; instead the fresh wound may be involved in the process. In another case, elsewhere reported in full, I found the tertiary lesion involving the ethmoid cells high up and producing head-

1 Zamike, p. 207.

ache of such severity as to simulate a true meningitis, which it probably would have led to had he not been etherized and the offending necrosed bone entirely removed. Perhaps I have been led astray oftener than is the rule. I imagine, however, that we all occasionally go astray on this subject. An elderly man with no syphilitic history, denying, in fact, anything of the kind whatever, was referred to me for difficulty of hearing and an obstruction in the nostril. I started to remove with a saw what was apparently a large cartilaginous spur, only to find it soft and easily cut; on examination I found it to be wholly granulation tissue. I feared it might be sarcomatous, but the bleeding was slight and there was no especial pain or tendency to extend very much. It showed, however, a tendency to recur. At the same time he complained of the throat and of rheumatism. Distinctly rheumatic treatment did not do much good. Under the antisyphilitic treatment all symptoms have cleared up, and he recently told me that he was never better in his life.

In my experience the pharyngeal lesions have been the most troublesome, especially when occurring high enough up on the pharyngeal wall to result in adhesions between the pharynx and the pillars. In that case the cavity of the pharynx may be completely shut off from that of the nose through the resulting contractions. The syphilitic pharyngeal ulcer is quite characteristic, being irregular in shape, of various sizes, with an elevated ulcerated border and a gnawed, mouse-eaten appearance, and with ridges and little hillocks of granulation tissue on its borders. It is covered with a gray exudate, and shows no tendency to heal until antisyphilitic treatment is begun. On the contrary, it is as destructive at times as rodent ulcer. I have several times tried antisyphilitic treatment as a diagnostic measure when it seemed in the individual case as though syphilis could not be present. Local and cleansing treatment was of no avail until this treatment was begun. The tonsils and both sides of the epiglottis are frequently the seat of the gumma. All the laryngeal cartilages may be affected by perichondritis occurring as a late and destructive result of the gumma, and life be endangered, or even destroyed, as a result. One of my patients reported that he had been told by an eminent expert on syphilis that he was cured. I found a broken-down gumma of one tonsil and the adjacent pharyngeal wall. Another patient had an ulceration of the left side of the pharynx, with mouse-tooth excoriation, raised borders, a dirty gray mucous deposit and a cup-shaped ulceration of the lingual surface of the right side of the epiglottis. This whole condition had been laid at the door of a dentist who had worked on her teeth, as due to infection from improperly cleaned instruments. Careful questioning revealed that she had been keeping company with a man who had been treated for some constitutional affection, probably syphilis, some three or four years before, but was reported cured. Improvement under proper remedies was rapid. As in the secondary, even more so here I regard the presence or absence of pain as important in the diagnosis. In syphilis there is little pain, whereas in carcinoma and tuberculosis, the diseases most likely to be confounded with syphilis at this stage, there is considerable pain, while the disturbance of nutrition and general constitutional dyscrasia is very marked.

Treatment: While authors usually recommend iodid of potassium only for this stage, I have had much better results with it when mercury was given at the same time. Cases which were not doing well under the iodid promptly improved when mercury was added. I have not usually given the iodid in large doses—5 to 10 grains three or four times a day, though I have given as high as 70 to 80 grains per dose three times a day. As a mercurial I have mostly used ¼ grain of the protoiodid. Both of these are given until the disease is under control and then one is given one week and the other a week, and later the entire treatment is intermitted every other month. Such treatment should be kept up two years. Mercury by inunction can be given if the above fails, and I am now using it in this form in a tertiary where the other seemed insufficient.

Thompson advises inunctions of 1 dram of mercurial ointment per day. Twenty-five to thirty inunctions are given and the treatment then intermitted for six months. At Aix-la-Chapelle daily inunctions are given by an experienced rubber together with sulphur baths, the mercury forming with the sulphur a sulphid of mercury which is easily eliminated. For local treatment of the ulcerated area I apply solid nitrate of silver stick as often as the case is seen and alkaline antiseptic washes.

It remains briefly to consider the hereditary type, the late manifestations of which in the upper air-tract have been variously described as syphilis congenita tarda, latent syphilis or occult syphilis, and occurring about the age of puberty, are substantially of the tertiary variety so far as appearances and symptoms go. The gumma seems usually to appear some time between puberty and 20 years of age, though syphilitic symptoms may appear at any time from birth on. In one case I was unable to determine whether it was a late congenital or a straight tertiary, as absolutely no history fitting either hypothesis was obtainable. When first seen, the characteristic pharyngeal ulcerations and granulations were present and beginning adhesions to the soft palate with accompanying contractions. I found she had been treated by an ophthalmologist for an iritis which he regarded as syphilitic, although as much in the dark as to the cause as I. The most searching questioning of the girl and both parents threw no light on the subject, yet the case was undoubtedly syphilitic. A good example of delayed hereditary syphilis was in a 17-year-old girl who came with her mother. The father's history was uncertain; the mother had a perforated septum and a saddle-nose. The girl had a perforated septum, saddle-nose, and cicatricial contractions and adhesions of the pharyngeal wall and soft palate, there being an opening into the nasopharynx only large enough to admit a probe. The history was that the throat conditions had been growing worse for several years; the condition probably began to develop somewhere around puberty. Improvement was rapid under treatment, but the adhesions and contractures remain. I once had a case of hereditary syphilis in a child referred to me, recovery of which took place promptly on removing a shoe-button from the nose.

What can be done for the relief of the deformities and interferences with bodily functions which result from the cicatrization and contraction following the healing of the ulcerations? When of soft palate and pharynx, the cavity of the mouth may be entirely cut off from that of the nose or its movements so affected as to prevent the natural action of the parts. This causes regurgitation of liquids during the act of swallowing and permanent mouth-breathing. The destructive process may ulcerate through the hard palate into the floor of the nose or vice versa. One of my cases had left as the only evidence of having had the disease a perforation of the hard palate into the floor of the nose; this I tried in

vain to cover over. Operative measures such as dilatation and cutting away the adhesions seem to be of little avail. The tissue is very fibrous and does not stretch, while after cutting operations the contraction may be greater than before. It is my opinion that there is not much we can do that offers much chance of real improvement. The worst adhesions are those between the soft palate and pharynx. In general, syphilis is a disease to be treated with constitutional measures and not with the knife or curette, though I have occasionally cut away with snare or scissors a little of the elevated granulation tissue of the pharyngeal ulcer.

DISCUSSION.

DR. EMIL MAYER, New York City—I am reminded of the injunction of a French writer to think always of syphilis, and when you are through think again of syphilis. We have always to bear that disease in mind when we have any one of these cicatricial conditions present. But I must take issue with the writer when he says that every destruction of the septum in the absence of history to the contrary should be considered syphilis. If that were the statement of the writer I must disagree with him, because we have a number of destructions of the cartilaginous septum that are not syphilitic.

DR. RICHARDS—I referred to the bony septum.

DR. MAYER—Well, then the statement is correct. There is a condition in the pharyngeal wall that is most difficult to describe, but which at once presents the picture to our minds as being due to syphilitic disease. That was shown recently in a case presented by Dr. Quinlan before the Academy of Medicine. The very moment I glanced at the pharynx in that case it gave the picture of syphilis, and shortly after Dr. Quinlan arrived and said it was one of his syphilitic cases. To say that our patients lie to us when they deny a syphilitic history is putting it pretty strong, for we do not know how long syphilis will carry. I myself have seen syphilis in the third generation, being able to trace it back to the grandmother. In one man who came to me the pharynx had that indefinable appearance that led me to suspect syphilis, but in the absence of a specific history I was forced to believe him. His brother had been operated on for genito-urinary trouble, a stricture being cut, and he promptly died, to the astonishment of his physician. The physician was severely blamed by the family, but it would seem to me that he probably also had syphilis, and if that had been known the defense of the operating surgeon would have been strong. My patient progressed nicely. The man's story was true. He never had an initial lesion, but later the father of my patient came to see me regarding the son. I then saw that the father had almost total destruction of the nose. In answer to my inquiries he said that he had had a fall in childhood, and in response to further inquiries said that a sister of his also had a similar deformity. So my patient had inherited a specific taint from his father, who had congenital syphilis and my first suspicions proved to be true and yet the statement of never having had syphilis was true enough as far as my patient knew.

DR. G. F. COTT, Buffalo—Dr. Richards has mentioned the transmissibility through the drinking-cup. How many cases are transmitted in that way it is impossible to tell, but that there are many of them I do not doubt. I know of a young girl who had an attack of tertiary syphilis, which was believed to be diphtheria, by her attending physician. It finally healed without any special treatment, leaving considerable scar tissue about the throat. This girl went from one physician to another for seven years, until finally she drifted into the dispensary and was treated for syphilis. Tracheotomy had to be done to save the girl's life, and finally gastrostomy to permit food to enter the stomach. That case was due to the use of the drinking cup. Too often we have a common public drinking-cup. Dr. Richards spoke of using mercury and potassium iodid, but I do not think that is the best treatment. In the secondary stage no doubt mercury is the best drug to use, but in the tertiary stage potassium iodid is the proper drug. But when mercury has not been used in the secondary stage you must then use it before you can get the best results from the iodid. Sometimes the patient is very much run down and then he or she will improve under tonic treatment, and afterward you can use the mixed treatment with much better result. The poison to be eliminated in the third stage is quite different from that in the second; the one is innocuous while the other, that of the second stage, is violently contagious, hence the difference in treatment and results.

DR. C. W. RICHARDSON, Washington, D. C.—I consider syphilis one of those diseases in which we should not only be charitable to the patient, but also to our fellows and to ourselves. There is hardly any disease in which one can be so well excused for making errors of diagnosis as in syphilis. We all find at times cases of syphilis in which we can scarcely make out the clinical history of syphilis until the case has been under observation for some time. Almost all the great syphilographers agree that in some cases it is almost impossible for one to make a differential diagnosis between syphilis and other ulcerative lesions in the same situation. The writer has given us a most excellent paper, and it seem impossible to find any point with which we can take issue; of course it is impossible for any writer to consider the subject in its entirety in a meeting of this kind. I shall refer to one or two points that the essayist neglected to touch on and which seem to me quite important. One of these is the frequency of syphilis of the postnasal cavity and the frequency with which it is overlooked, not only by the general practitioner but occasionally by the specialist. I refer to tertiary lesions in this region. This is not an infrequent form of syphilis of the pharynx and I have seen extensive infiltrations and broken-down gummatous areas in the vault, the posterior wall and on the posterior surface of the velum. An ulceration on the posterior surface of the velum is almost the clearest pathognomonic symptom of syphilis that we can find. Syphilitic lesions in this area are the ones that usually give us the greatest difficulty in the after-treatment, on account of adhesions forming and causing attachment between the velum and the posterior surface of the pharynx, resulting in those cicatricial contractions which render the life of the patient almost unbearable. At times formations of syphilitic lesions or infiltrates on the anterior surface of the velum and palatine arch are extremely difficult to differentiate from tubercular infiltrates. Of course such a differentiation is not always difficult. Last year I saw one of this type of ulcerations situated just above the tonsil, covering an area of considerable extent, ragged and presenting all the superficial appearance of a tertiary lesion of syphilis. The only thing which would lead me not to believe it was syphilis was the intense pain on swallowing. In order to clear up the diagnosis I put the patient on antisyphilitic treatment and the lesion healed and cleared up in about ten days. The patient was a splendidly nourished man from the mountainous district of Virginia. He returned in about a month with a freshly involved area just in front and below the area formerly affected, and with the first evidence of tubercular manifestation of the lungs, in the way of cough and expectoration. The diagnosis was then clear. The bacilli were found. Therefore, I say in these cases we should be extremely charitable, not only with ourselves, but with others. We meet also a large class of cases in the female, both in the married and in the single female, in which we have to depend to a large extent on the appearance of the local lesion. We can not scrutinize these cases too closely. We must put them on general treatment if we think they look like syphilis and clear up the history if possible in that way. You all know what I mean by going carefully into the examination of these cases. If we feel around we may elicit evidences of secondary symptoms. Often we will find none. We can not always confront the patient, and sometimes it is better not to go too far into the history. The differentiation of syphilitic conditions is sometimes easy and sometimes attended with considerable difficulty. Syphilitic lesions of the larynx usually involve the epiglottis and they are usually single, while the tubercular lesion is usually situated on the posterior wall of the larynx and the aryepiglottidian fold. But there comes a class of mixed cases in which no signs hold and there again we are thrown back on the effect of treatment. Dr. Richards, in his paper, spoke of the

treatment of adhesions between the palate and the posterior wall of the pharynx and the difficulty of getting good results. Of course they are difficult to manage. But if an eyelet be made on each lateral wall between the attachment of the velum with the posterior pharyngeal wall, by the passing of a ligature through and letting it stay there long enough to form a thorough cicatricial border, then the separation may be gradually made between this eyelet and the centrum and you will usually find the result will be more or less permanent.

Dr. C. F. Theisen, Albany—Dr. Richards' paper has been so exhaustive that it is almost impossible to add anything. There is, however, one condition which has not been considered, the primary tumor which occasionally occurs on the nasal septum of a syphilitic subject. The condition is certainly rare, and when it exists it is almost impossible to make a differential diagnosis clinically. A few years ago a gentleman came to my office who admitted having had syphilis. He could not breathe through one nostril. I found a growth about the size of a strawberry on the septum, left nostril, and I at once jumped to the conclusion, because of the fact that he had had a chancre, that it was simply a syphilitic condition. I gave him potassium iodid, but he got constantly worse. I then removed the tumor with the cold snare, thoroughly curetting the seat of attachment, and later for some time lactic acid was applied. The nose got entirely well, and there has been no recurrence. Later he was again given antisyphilitic treatment. On examination the tumor was found to be a granulation growth, containing thousands of tubercle bacilli and some typical necrotic tubercles. One other point occurs to me with regard to the treatment. Dr. Richards says he used potassium iodid in combination with mercurials. I have not had good results with this method of treatment in tertiary syphilis. I use potassium iodid only, and very large doses if necessary. This has always given me the best results. In the secondary stage, of course, nobody will question the value of mixed treatment.

Dr. J. O. Roe, Rochester—Whenever you are in doubt in regard to the nature of any ulcerative condition of the nose and throat, always suspect syphilis. A lady past middle life came to me with ulceration about the throat and a large growth in the fauces just below and behind the velum. There was also ulceration of the velum. This being a lady from a family above reproach, and having an unquestionable character herself, nobody had suspected syphilis. As soon as I examined her I was satisfied as to the nature of the trouble. In ascertaining the history of the case, I found she had been under the care of an excellent surgeon, who had not suspected syphilis because of her social standing. He regarded the case as one of epithelioma. The outcome of the case was that large doses of potassium iodid cured the "epithelioma," and in less than six weeks it entirely disappeared. This lady had lost her voice, had great difficulty in swallowing and many clinical characteristics which would confirm the opinion that it was an epithelioma. The case illustrates the fact that we should always suspect syphilis even in cases where we might believe the disease to be something else. At the present time I have three other cases of syphilis occurring in persons regarded as above reproach. The patients are females, in families where syphilis would not be suspected. It is not even necessary to seek a history of the infection and especially for one familiar with the manifestations of the disease; and furthermore, the treatment will confirm the diagnosis, if the disease be of specific origin. The presence of syphilis, however, does not necessarily implicate the person, for if not hereditary it is often contracted in a most innocent manner, without even the knowledge of the patient.

Dr. F. J. Quinlan, New York City—One or two points struck me as the essayist interested us in his recital. One is in reference to the secondary manifestations of this disease, namely, in those erosions which later on appear as condylomata. I have for a long time been at sea for some method which would relieve these conditions that are obstinate, resistant and I may add rebellious. In conversation with an eminent syphilographer he asked why I did not try the ordinary black wash. I can recommend it to you in the cases where there is breaking down. After thoroughly cleansing the surface, apply the black wash. This gives great activity and stimulation. Now, in regard to the use of mercury, I have given the protiodid of mercury and my patients have not received any benefit from it. I think the form of the medicine often is important. I have resorted to a French pill which I find one of the greatest adjuncts to this treatment. The tablets disintegrate almost in the mouth and the mercury readily gets into the circulation. When a patient appears I question him as to the presence of syphilis and if there is any doubt I put him on antisyphilitic treatment. I do this because several years ago I had a very lamentable experience. I went away from the city, and in a few days a patient from whom I had removed a spur was taken with alarming, and it was feared at the time it would be fatal, hemorrhage. It was controlled. Some wise head suggested potassium iodid, and the trouble entirely disappeared. Where there is the slightest suspicion of syphilis I at once introduce the antisyphilitic treatment before resorting to any surgical measures. This not only aids the tissue to recuperate much better, but it gives an additional reactionary power.

Dr. R. C. Myles, New York City—Some one has said that syphilis is always surprising us. I do not know that it is necessary to impress this on specialists so much as on semi-specialists and the general practitioners. I have had many patients present themselves with gummatous processes who had been treated previously, apparently without the condition being recognized. Potassium iodid always removes the doubt in the diagnosis. I have seen several patients who had received 15 or 20 grains of the iodid without any effect, when within ten days 80 grains caused complete healing and stopped all the symptoms which before had constantly increased. In the diagnosis of incipient gumma we can not pay much attention to the history. Often there is no history obtainable until you find one for them, possibly dating back, as the Doctor says, from three to thirty-five years. We should try to impress on those in general practice the importance of early recognition of the gummatous manifestations of the upper respiratory tract, and if they can not diagnose the condition, to refer the case to some one who can, even if the case must be referred back to them.

Dr. Otto Joachim, New Orleans—I wish to call attention to two factors. Mixed infection has been called attention to because of its difficulty in diagnosis. I have had recently two cases in which there appeared what seemed to be a mucous patch on the soft palate, in one instance extending to the tonsil. Upon inquiry, primary infection was denied. No evidence to the contrary could be found in the history of the patient after diligent and careful examination, nor from physical examination. I withheld constitutional treatment from the case, as I did not think we were justified in launching such a patient on a course of treatment that extends from two to four years. I do not think, unless we have absolute corroborative symptoms of syphilis of some sort, that we should make a diagnosis from a mucous patch in the throat alone. In these two cases the trouble disappeared in two weeks and no secondary or other symptoms have since appeared. The patients have been and are under continual supervision. In the treatment of syphilis, many cases have come under my care which have been in the hands of excellent practitioners and have received adequate treatment without benefit to the local condition. In those cases I could almost always find some gastro-enteritis or some catarrh of the digestive tract, which to my mind interfered with the absorption of the otherwise proper medication. In these cases I have resorted to the inunction treatment, and by giving the stomach a rest these patients have done, usually, excellently well. In some cases the progress of the disease is remarkable. I remember one case in which the gumma broke down, leaving a hole in the soft palate the size of a quill, which increased to one the size of the end of your finger by the next day, and to insure quick action I was induced to use intramuscular injections. I used the salicylate of mercury in oleum petrolati. This is of value when the disintegration is rapid and the treatment must be pushed. Laterly I have added orthoform in 1 per cent. to relieve the pain that usually accompanies these injections.

A PLEA FOR GREATER SIMPLICITY IN THERAPEUTICS.*

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The tendency in development of the physical world is toward complexity. Evolution pictures animal life progressing from the simplest atom to the most complex animal. In the world of science, on the other hand, the greatest steps have been always toward simplicity. The greatest attainments of the intellect have been the discovery of the principles and laws governing complex nature. So, while the accumulation of knowledge is constantly going forward, we find science, which is an application of mind to matter, always simplifying.

In scientific therapeutics the same process is seen. The accumulation of observations has been great. They must be simplified and brought under straightforward laws and applications. The first step must be the selection of a few drugs that represent the activities of their class. The advantage of such classification to the physician will be that the great amount of labor in the attempt to master an elaborate pharmacopeia will be saved. Such an attempt, as a rule, stifles efforts toward a clear understanding of the principles of therapeutics. The habitual handling of a small number of drugs tends to a clearness of thought and a definiteness of purpose that makes the treatment of disease more scientific, and a delight to the practitioner and to all who take part in its study. Nor are the advantages less to the patient than to the physician.

Single drugs are more easily administered. When it has been decided to use the product of a certain plant it is but a step to the use of its active principle. In this way the number of disagreeable physiologic symptoms is diminished even further than by the use of a single drug. If the patient is more susceptible than is expected, this fact is immediately discovered, and a change of plan can be instituted without delay. When many drugs are given at a time, it frequently happens that a single ingredient of a complicated nature causes injurious effects that are attributed to the course of the disease. How frequently this may happen is easily appreciated by those who have noted the violent symptoms that sometimes accompany a full physiologic dose of a single drug. Such an instance is a patient of my own, who is so susceptible to potassium in any form that she is made violently ill by it. How many ordinary prescriptions containing a small amount of potassium might she have taken, and suffered from the taking, without this idiosyncrasy having been discovered! A patient may not be able to take the smallest quantity of quinin without it producing violent symptoms. There is hardly a drug that has not its person who can not take it in any form or quantity. I do not maintain that every case can be treated by a single drug, or by any particular number, but that drugs should be added to the therapeutic plan one at a time, and that the component parts should be so planned that they can be withdrawn one at a time if necessary.

In this connection the claim for the ready-made mixtures, of which so many hundreds are advertised, must be examined. Medicine has been blessed at long intervals by the discovery of remedies which have a specific power to cure particular diseases. These remedies can be counted on the fingers of one hand, but so satisfactory are they that an intense desire for more has been awakened. The introduction of mixtures under specific names is founded upon this craving of the profession for specific remedies that can be used as direct antagonists to particular diseases. It is pleasant to forget the fact that most diseases must be treated indirectly, and that it is nearly always necessary to treat the patient and not the specific disease. Most medication is administered with the immediate object of obtaining a physiologic effect of the drug, with the expectation that this effect will have a beneficial influence on the morbid process. In this light it is an absurdity to give a patient a large number of drugs mixed up together, no one of which is in large enough dose to produce a definite result. It is far more philosophic to arrange the plan of medication for each case as indications arise.

It is necessary to speak of proprietary mixtures in this connection, because many younger men, even those who are hospital trained, who have not the technical knowledge to construct complicated prescriptions, fall into the habit of using certain mixtures. Some of these mixtures almost rival, in the number of ingredients, the original formula of Warburg's tincture, and it is impossible often by the most careful examination to analyze the effects, since the proprietors, for their own commercial protection, conceal the quantities of some of the ingredients.

Simple prescribing is much facilitated by the use, as far as possible, of the active principles of drugs, though the fact must be carefully kept in view that not all drugs, even the most important, are satisfactorily represented by a single element that can be isolated. Notably is this the case with digitalis and aconite.

Another great disadvantage of complicated prescriptions is that when used with an intelligent conception of the action of their component parts the chances are few of meeting cases that they exactly fit. This applies particularly to the so-called "favorite prescriptions" that are often spoken of. The use of these ready-contrived mixtures is no less cumbersome than it would be if an artisan had a separate box of tools for every different piece of work. How clumsily would the tools be used, and how inferior this workman to the one who had a small number of tools, each of which he was able to handle with skill. Medicine will gain in accuracy when therapeutics becomes less obscure, by requiring every physician to know, as far as possible, the complete natural history, not only of disease but of the drugs with which disease is to be combated. The old notion, perpetuated in that abominable word "allopathy," whereby each drug or a mixture of drugs was supposed to have the power of meeting and destroying a disease, is not longer held by men of scientific attainments. It is known that there are powers inherent in the body itself which tend to the cure of disease. It is also known that drugs are sometimes capable of removing the active cause of disease, by destroying the infection and modifying the secretions; that they have the power of assisting the tissues in their mutual reconstruction where the course of disease has been checked, and of modifying physiological processes whereby the body is rendered more able to resist disease. All these things are brought about by the application of suitable remedies to certain conditions and is best accomplished by a few simple and well-known drugs. Our plea is for an open hand-to-hand contest with disease, seconded by the use of well-tried, strong and clearly understood weapons, instead of a contest carried on in

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

obscurity, like ancient battles fought with poor weapons, obscured by the fumes of black powder.

Thus the idea of the prescription as a formula constructed at the time to cure a disease under the precise conditions present must not be lost sight of. The active agent in the prescription may be less conspicuous than the adjuvant, the corrective or the vehicle. The older art of therapeutics needs to be brought into line with modern practice or else dropped altogether. It is painful to see students who have been taught only the use of alkaloids, serums and tablet triturates, attempting, when they begin practice, to prescribe according to the demands of an average family practice. Some fall into the iniquitous habit of ordering in a routine way copyrighted formulæ. Others buy a pocket formulary, which is often a poor conglomeration of prescriptions, and copy such that seem to them suitable for the case. Few are able to construct satisfactory formulæ to suit individual cases. A student should be taught how to prescribe drugs; to know what may be expected from their use, and what other drugs will facilitate their action or render their administration more easy.

A true education in the use of drugs should commence like a training in music, or any other art or science, in the use of a few simple elements and the gradual acquisition of power to combine them and use them in groups. In hospitals and teaching institutions a student is too often taught the treatment of disease by the use of an established formulary. This is a constant menace to therapeutic education. You find the hospital interne experimenting upon the value of Dr. D.'s "antibilious"—or "antigout"—triturate without any definite comprehension of which of the various elements in the combination are the active ones. I have often seen men, so trained, regarding as different therapeutic agents formulæ differing only in the vehicle. Students taught to build up their therapeutic plan from simple indications would not be subject to any such absurdity.

The plea for a greater simplicity in therapeutics is directed particularly to those men who have reached what might be called the confusional stage of knowledge and whose medical experience has crowded upon them with such a flood of therapeutic suggestion that they are smothered by a sea of vague promises. It often requires a profound knowledge of medicine and much self-confidence to adhere to a simple and straightforward therapy in a case that is not doing as well as one might wish. There is a spirit of the gambler in him who would try an experiment with some complicated or secret remedy because it is backed by the certificates of inaccurate observers, implying that the case in hand is exactly like one that was cured by this wonderful combination. It can not always be said that a combination is no better than one of its active ingredients, but it can be said that there is no mixture that would not be better for having been confined to as few as three or four ingredients. A prescription that contains a dozen or twenty drugs is of use only to the one who wishes to take the gambler's chance that some one ingredient will do more good than will all the rest do harm. Like all gambling, the game is against the player in favor of the house—the house being in this instance the manufacturer of the medicine, who, whether there is success or failure, always gets his profit.

If a young physician, or an older one for that matter, only understands a few drugs thoroughly, it would be better for him to use them in appropriate cases and rely on hygiene in all others. What we need is a reconstruction of our therapeutics, whereby knowledge and experience will be built up, brick by brick, each one being solidly in place before another is added. The younger men would in all probability become most familiar with the newer drugs and use them to the exclusion of the older ones. This is only natural, and older men must not feel that it is their duty to use every new thing. Their old tools are often better, and it is time enough to adopt new ones when their usefulness is thoroughly proved. Nitre may be a better drug than nitroglycerin in the system of practice of many a good practitioner, still the young hospital graduate knows but little of the former most splendid remedy, but can talk by the hour on the use of the latter.

More definite and simple therapeutics are an advantage to science in that the scientific method of inductive reasoning can be applied. True logical reasoning as to cause and effect are found when either the premises are within the grasp of the intellect or the intellect is large enough to grasp the premises. The premises in therapeutic reasoning comprise exact knowledge of diseased conditions and a comprehensive understanding of the probable action of any treatment under the circumstances present. When a complicated pathology forms a composite picture with the not less complex physiology of even a single drug, how difficult is the analysis! Who is to understand such a picture when confused by twenty active therapeutic elements? What wonder is it that we hear of therapeutic nihilism; that many a strong mind abandons the serious study of therapeutics for the more definite and interesting field of clinical and microscopic pathology, or that the surgical specialties so far occupy public attention? Science demands that there shall be a re-study of each drug by itself and that its place shall be definitely settled. How attractive are even false systems, when their supposed principles are such as are easily grasped by the mind! May we not look forward to a time when scientific medicine shall be so clearly worked out that it will be possible to define its claims by explanations as simple as those of systems constructed for the purpose of deceiving the public? It is utterly impossible to meet by popular argument, based upon therapeutics in their present complicated state, such simple propositions as that all disease is imaginary, or that all disease is to be cured by the restoration of a dislocated ligament. The apostle of any faith who has a simple, definite proposition to present has often more advantage with the masses from its simplicity than disadvantage from its falsity. So not only for the sake of science, but for the dissemination of medical truth, methods must be simplified and results clearly defined.

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THERAPEUTIC PROGRESS.*

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It seems particularly appropriate at this time, when so much attention is being given to the decennial revision of the National Pharmacopeia, to take special notice of the progress which we have made along therapeutic lines during the past ten years, and try to note some of the lines along which future progress will

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probably occur, and some of the reasons why our progress has not been more rapid in the past.

We are obliged to confess at the outset that scientific therapeutics is to-day far behind all other branches of medical science. The cause is not far to find. The almost farcical teaching of materia medica and therapeutics, even in our best medical schools, gives us every year thousands of men appallingly ignorant of the physical and therapeutic properties of our most common drugs, yet well versed in other branches.

Again, our progress has been retarded because of the great mass of comparatively worthless and poorly-understood drugs which compose a large part of our present Pharmacopeia. Of the thousand titles in that work, not one-tenth are remedies whose action and effects have been definitely worked out and placed on a scientific basis; and if this is so of official medicines, what can we say of the thousands of non-officials which are being so freely prescribed?

Of the thousand official titles not more than one-fifth will be encountered in checking over tens of thousands of prescriptions from every section of the country. Why, then, should we continue to carry this load?

Another serious bar to more rapid progress is the marked credulity which physicians have, in common with ordinary people, toward the most transparent therapeutic humbug, if its virtue be only impressed on them by the repeated iteration of skilful advertisers. The most irrational combinations, the alleged properties of which are weekly impressed on the physician's mind, soon efface the memory of slightingly taught official therapeutics.

If we turn to our works of reference, where the leaders of the profession are supposed to point out the way, how frequently do we come upon complicated prescriptions whose ingredients are known to the junior pharmacist to be incompatible, physiologically and chemically! And what a vast majority of the formulæ published in some of our medical journals are simply unutterable abominations, therapeutically and pharmaceutically!

Trousseau says: "The practice of medicine is the art of curing, and it is nothing more than that; to cure is its object, and all our plans must culminate in medico-chirurgical therapeutics." If this be so, and surely the great body of our profession will acknowledge the correctness of the definition, how far have we at times wandered from our true aim! How little space is taken up in our journals by contributions which directly attempt to increase our knowledge of the exact effects of remedies which we prescribe so freely?

Another bar to therapeutic progress is that even our best known and most used remedies, of whose value there can be no shadow of doubt, are of uncertain and indefinite composition, as at present most commonly prescribed. Let us take, for example, digitalis. This is officially described as consisting of the second year's leaves of the biennial plant, collected when the flowers are two-thirds opened and from the wild plant grown in England. We are further told that the leaves rapidly deteriorate in strength, and those more than a year old should be destroyed. Now this description may have been a most valuable guide to the druggist of one hundred years ago, but of what practical value is it to the druggist or physician of to-day, who depends wholly on the wholesale houses for his supply, and perforce must accept whatever is sent him? Even the last suggestion for destroying old stocks of the drug is very seldom followed. Far more frequently are they converted into tinctures and infusions. Yet the sole point of interest to the physician in regard to this drug is simply how much of the active principle does a given dose contain? Yet on this one vital point the Pharmacopeia is as silent as the grave. In passing, permit me to remark in this connection that it is surprising that the seeds of this plant, which are far more uniform in strength and deteriorate very little and yet average ten times the strength of the leaves, are not made official in their place.

The entire discussion in regard to the relative merits of the whole drug, the powdered, the extract, the fluid extract, the infusion and the tincture can easily be dismissed, and should be, if only the physicians of to-day would recognize what it is they really want, to-wit, that minute amount of active principle which alone gives to the drug its value for his purposes. It seems to be one of the most difficult matters for the most careful physician to clearly discriminate in regard to exactly what effect he wishes to produce in giving any drug, and equally hard for him to observe with scientific accuracy the exact effect, if any, which he really produces by administering it.

This element of uncertainty as to just what effect a given dose of any of our galenicals will produce, is, I believe a defect inherent in the form of the drug of itself and in our blind way of administering it. Why? Because it is practically impossible that any two samples of any of our active vegetable drugs will contain exactly the same amount of active medicinal principles, be they alkaloids, glucosids or others.

We too often forget that it is not the sole object of any plant's existence to produce those particular principles which we happen to desire and which constitute their value to us as crude drugs. The amount of these active principles present must depend in any given case on a hundred external circumstances beyond the control of man. Heat and cold, moisture and drouth, the richness of the soil, the length of the season, all these and many more incidentals determine whether a single given plant shall prepare and store up .85 per cent. of aconitin or only .25; and yet in giving the tincture of this most powerful drug, we complain of the lack of uniformity in the effects of a given dose when two specimens prepared from two equally good-appearing plants must vary over 300 per cent.

Gentlemen, is it not sarcasm to speak of the scientific practice of medicine while such anomalies are a part of our system? Yet far wider variations than these are reported by undeniable authority, and by those who handle great quantities of these, our trusted weapons of warfare.

Again, we are often confused in the process of our investigation of drugs at finding that one and the same plant often produces at the same time two or more active principles whose medicinal effects are diametrically opposed to each other along a greater part of their spheres of action.

The ancient and honorable opium is a well-known example of this fact, where the convulsive and exciting narcotin and thebain exist side by side with the sedative and narcotic codein and morphin, yet both would be constantly given together if we had not learned to abandon the crude drug so largely and give only the pure alkaloids for the special indications which we desire to meet. Jaborandi is another marked example of this fact. Of its alkaloids, pilocarpin is relaxant and diaphoretic to a remarkable degree, while jaborin is myotic and convulsant second only to atropin. Now,

in using the crude drug or any of its preparations, what possible means have we of knowing just what proportion of these antagonistic alkaloids are present in any particular specimen? Consequently it is impossible for us to arrive at any exact dosage for exact effect. We know that usually pilocarpin greatly predominates, but both the actual percentage of pilocarpin and its relative proportion to jaborin is extremely valuable. For this reason the profession has of recent years been driven to almost abandon the crude drug and its preparations, and use only the alkaloid pilocarpin to obtain the specific effects desired. What has been done in these instances, I believe, must be done with all.

The widespread interest which is being manifested to-day by the great mass of our profession, outside of the large cities, in the so-called alkaloidal plan of therapeutics, is, I believe, one of the most important steps in scientific therapeutic progress which has ever been made, although perhaps largely influenced at present by commercialism; yet I believe that the next ten years will see it established as the only recognized method of securing galenical drug effects on the human organism.

Along the line of progress must also be noted the universal adoption of synthetic remedies of definite composition and exact therapeutic effect. While it is hardly to be expected that the vision of a few years past will ever be wholly realized, that is, that the chemists will be able to present to us remedies whose properties can be exactly foretold by their chemical composition, and may therefore be prepared to exactly meet any and every desired therapeutic indication; yet they have already done more than in all the years that went before, in giving us remedies which will definitely control suffering in many of its forms.

It would be folly for me to attempt more than an allusion to the crowning achievement in scientific therapeutics, namely, the production of immunizing serums which will definitely combat definite disease processes, thereby approaching closely the ideal of an absolute specific, and the allied products or so-called organic extracts, as for example, suprarenal extract and thyroid extract. The marvelous effects of the latter in cases of cretinism and allied conditions, we believe, have never been paralleled by the discovery of any one therapeutic agent for any pathological condition since the science of medicine began. This one achievement marks an epoch in therapeutic progress.

Let us also acknowledge that the high tide of therapeutic nihilism which threatened for a time to sweep away all reliance on therapeutic drugs, has served a most valuable purpose in stimulating real therapeutic progress. It has roused the profession to demand scientific proof of the efficiency of each and every agent to accomplish the purpose for which it is advised. It has led them to observe more clearly and reason more closely in ascertaining in the first place just what effects it wishes to produce in a given case, and then to discriminate more thoroughly as to just what agent, if any, will in the simplest and most nearly physiological manner accomplish the effect desired. In short, the present tendency of the profession to sweep away the vast mass of accumulated trash from the Pharmacopeia, to adopt simple alkaloid medication where needed, to relieve immediate and unnecessary suffering by definite synthetic compounds, to apply the physiological specific of animal origin whose efficiency is unerringly proved by the clinical laboratory, and to employ no remedy whose beneficial action can not be accurately demonstrated—all constitute a great stride toward scientific therapeutics which marks the doom of the old-time drug shop, it is true, but at the same time shows that the profession at last is making true therapeutic progress.

DISCUSSION ON PAPERS OF DRS. BISHOP AND MELVIN.

Dr. N. S. Davis, Jr., Chicago—There is no question of the desirability of using exclusively, or almost exclusively, simple preparations of drugs in place of complex formulæ. It is preferable to use alkaloids and active principles of drugs whose composition is known and definite, where it is possible to do so, in preference to combinations of uncertain value. There are some drugs whose effects are known, but whose active principles have not yet been determined. These must be used in their pharmacopeial preparations, especially in the form of fluid, or solid extracts. As regards standardization, I think that it is not possible, on this account, to standardize all preparations at the present time. Much advance has already been made in this direction, but as it depends on the work of trained investigators, pharmacists and expert chemists, it is necessarily expensive and slow in its progress. I do not feel, as many do, that we should always adopt the rule of prescribing only one drug at a time. We obtain a much better effect, in some cases, from a combination of drugs. For instance, if we wish to utilize only a part of the effect of the drug opium, such as the anodyne action of it, and wish to avoid the constipating effect, we may accomplish this by combining with it a laxative. The fact is well known that most of these crude drugs have more than one effect on the human body and act on different organs. They have several distinct actions and produce a complex effect; we can not get a simple effect from them. By our combinations, however, we can get a more simple effect by concentrating the action on certain organs and diminishing other undesirable effects. He expressed the hope that our profession would act harmoniously with the pharmaceutical profession in this important work of determining the active principles of all remedies and establishing their physiological effects so that prescribing may be rendered more exact, definite and scientific.

Dr. Frank Woodbury, Philadelphia—The enterprising manufacturers of pharmaceutical specialties, in their desire to introduce new remedies, not only publish enthusiastic reports of the new agents, but also try, both directly and indirectly, to discredit the older remedies which physicians are using. This deliberate attempt to create dissatisfaction with the materia medica is often successful and is responsible for a great deal of therapeutic skepticism, for when patients see their medical attendants willing to "try" all the new remedies, it breaks down their confidence in the judgment and skill of their physician. The speaker suggested that new remedies should be used exclusively by hospital physicians until their value or worthlessness is fully established by clinical and laboratory investigation, and that, as the rule, the profession at large should stick to the pharmacopeia.

Dr. T. B. Greenley, Meadow Lawn, Ky.—Patients often think that they can not take certain remedies. A man with malaria, to whom I wanted to give quinin, absolutely refused to take it. I had some blue mass with me and I made up several pills, each containing 2 grains of quinin. The patient took the pills, one every two hours, and did not know that he was taking quinin; the chills did not return. In another case, which was that of a lady, who also said that she could not take quinin, I thought that the symptoms she spoke of might be psychologic, so I prescribed it in some combination and did not let her know that she was taking quinin. The next day, however, I found her broken out with a rash of urticaria, and she requested me to stop the remedy. In a case of typhoid fever that needed quinin, but could not take it by the mouth, I employed the hypodermic method of administration of bisulphate with much better results, and the patient did not know that he was taking quinin. We should not rely too absolutely on the statements of the patient with regard to the effects of a remedy, but if it is required, it should be given in some other form, without the patient's knowledge; at the same time we should watch for any ill results.

DR. O. T. OSBORNE, New Haven—One thing that has caused some delay in the progress of therapeutics is the need of the clinical study of cases while taking little or no medicine, so as to determine the cause of the disease if left to itself. Secondly, therapeutists frequently give drugs which mask the disease. The path of progress lies between these two. Therapy does not mean drugging, but we must know the pathology of the disease and the effect of our remedies, and then make a scientific application of the remedy to the condition. With regard to simplicity in prescribing, he approved of the plan of giving drugs in as simple a form as possible. He did not think it polypharmacy to give several drugs, which work together in the same line, each one assisting the other. Polypharmacy is giving combinations of various remedies with contrary effects, and arises from uncertainty in the prescriber's mind as to what remedy is the best to give; it is unscientific and should be condemned in favor of scientific simplicity in therapeutics.

DR. C. C. FITE, New York City—Something has been said about the recent great increase in the demand for nostrums. I think that it is often due to the fact that the physician does not give the patient the prompt relief that he desires, and he accordingly goes to a drug store and asks for a nostrum which will relieve his symptoms without delay. He thought that there is a tendency toward too much scientific study of the disease and not enough attention is paid to the therapy of the case by many physicians.

DR. WARREN B. HILL, Milwaukee—The reader of the paper advised teaching a few drugs to students at our colleges, and teaching them well. He would say, teach many drugs and teach them all well. The trouble is that not enough attention is given to this important department in our colleges; less money is spent for teaching drugs than for the other branches. One difficulty with the text-books is that they do not systematize the information as they should. It is a fact that it is better to know a few drugs and to know them well than a greater number imperfectly, but it is better to know many well. There should be greater discrimination between remedies with similarity of action. The busy physician falls into routine prescribing and is too apt to say: "This is a case of heart disease, therefore give digitalis." This remedy should be appropriate to the physiology and pathology of the case.

DR. A. B. LYONS (delegate Am. Pharm. Ass'n.)—I appreciate fully the importance of the principles laid down in the papers just read. At the same time, I wish to insist that we are not now in a position to assay a great many of our drugs, such as ergot, aconite and so on; and we really have no scientific data as to their use. We know that one manufacturer will obtain what he calls aconitin and another makes something very different, which he calls aconitin. These vary greatly in their physiological effects. The crude drugs will vary a great deal more than the proportion stated, of 25 and 85 per cent. If standardization, as advocated by the author of the paper, should be carried out at present we should be led into the greatest possible confusion, while apparently making a scientific advance in our therapeutics. The revisers of the pharmacopeia have given this subject much discussion and still have it under consideration. I think that they have done the best that could be done under existing conditions.

DR. J. N. UPSHUR, Richmond, Va.—The student of medicine should be taught at college, and should make it the axiom of his life, not to prescribe any drug unless he has a good reason for prescribing that particular drug, and not to combine drugs unless he could give equally good reason for combining them. The greatest difficulty in the study of medicine is with the materia medica. In teaching this complicated and difficult subject, I advocate commencing with drugs that are comparatively simple in their structure and definite in their action. Following these, should be gradually introduced the drugs that are more complicated. The physician should not close his materia medica when he leaves college and lay it aside, but should make it his daily study. I like the method, generally, of giving single drugs and of simplicity in prescribing. While we are under great obligation to the manufacturing pharmacist for many excellent preparations, I would say that the greatest menace to our profession to-day is the multitude of proprietary products with which our offices are filled by these enterprising manufacturers. These are often attractive preparations and physicians are urged to prescribe them. The misfortune is that we know nothing about their real composition or about their physiological action. I recall a case of failure of the circulation in a patient with inflammation of the kidneys. Several physicians were in consultation on the case and they had recommended diuretin. I advocated strychnin in preference, as diuretin contains salicylate of soda, which is a heart depressant, and should not be given, but I was overruled and the patient had diuretin and died. I think it full time that an effort should be made to impress on the profession the necessity of paying more attention to this subject.

DR. GEORGE J. LOCHBOEHLER, Washington, D. C.—Why should we allow ourselves to be insulted by these men who leave their samples of drugs at our offices? An agent left a preparation at my office last week; it was a combination of pepsin and pancreatin, and he had the impudence to ask physicians to use it for indigestion, although we all know that pepsin requires an acid solution in order that it may act and pancreatin an alkaline solution. And yet physicians use this preparation or it would not pay the manufacturers to send out their representatives to push it. These men know nothing about therapeutics and they come to our offices to tell physicians how to treat cases of disease. One of these did not know what strychnin is, and when asked, said that "strychnin is the active principle of arsenic." I call attention to the impudence of a firm which sends out men to teach physicians to use drugs; ignorant men, who do not know more than to say that strychnin is the active principle of arsenic.

THE PHYSICIAN AS A SCIENTIST.*

N. SENN, M.D., PH.D., LL.D.
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CHICAGO.

The sentiment to which I have been invited to respond on this pleasant occasion is a timely and important one. My friend and colleague, Professor Fenger, who is our honored guest this evening, has reached his sixtieth birthday, and we are assembled around this festive board to tender our congratulations and to wish him many years of usefulness in the interests of our profession and humanity.

It is an easy matter to eulogize the dead, it must be a source of great and lasting satisfaction to receive the recognition and encomiums from competing colleagues during the prime of life, as in the case of our guest.

Professor Fenger needs no introduction. His name and fame are known wherever modern surgery is practiced. Although a general surgeon, the sentiment "The Physician as a Scientist," applies to him as he is a physician in the broadest sense of the word, and his scientific researches have for the last forty years graced and enriched medical as well as surgical literature. Science is an exacting and jealous mistress. She detests pretension and illogical, immature conclusions. She loves and honors the truth. She ignores nationality, creed, politics, and social position. She plucks her golden treasures from all available sources. She demands from her devotees earnestness, honesty, perseverance, unselfishness. She is exacting, always ready to criticize, but just in her final decision. She is reserved in the distribution of honors, and when honors are received at her shrine, it always means that they have been dearly bought, not with gold or through outside influence, but by hard and unselfish work. Science has little sympathy with what is regarded by the world as amusement. The span of human life is so short and the field of science so vast

* Response to a toast at the Testimonial Banquet to Professor Christian Fenger, Nov. 3, 1900.

and rich, that those who explore and cultivate it have but little time to spare for their own recreation and amusement.

How I envy the men whose vocation in life consists in the pursuit of science, unobstructed by the hardships and anxieties of a professional career! What a source of pleasure and satisfaction it must be to devote the energies of a lifetime to scientific investigations and research! How different with the physician as a scientist! From morning until night, and from night until morning, he must spend most of his time in the care of his suffering patrons, and there is not an hour he can call his own. And yet what has the physician done for science? The healing art rests on science, and the physician is the one who built the foundation.

SCIENCE THE FOUNDATION OF TRUE PRACTICE.

Without science the practice of medicine and surgery of to-day would be what it was four hundred and fifty years before the birth of Christ, crude and empirical. The light of science began to illuminate the temple of medicine with the classical writings of Hippocrates, and it has shone brighter and brighter until at the present time its effulgent rays are penetrating its remotest nooks and corners. What gems of wisdom and erudite teaching can be found in the writings of the great physicians in the distant past! Who can read the works of Hippocrates, Celsus, Galen, Avicenna, and their contemporaries, without being thrilled by the spirit of scientific investigations which they contain? Then came the dark ages which inhibited scientific progress, followed by a rekindling of the light of medicine by the epoch-making labors of Harvey, Vesalius, Morgagni, Haller, and a host of co-workers who paved the way to make medicine what it is to-day—a science and an art. I need not tell you what medicine owes to the scientific work of John and William Hunter, Schwann, Johannes Mueller, Ludwig, Helmholtz, Virchow, Rokitansky, Rindfleisch, Sir James Paget, Billroth, Thiersch, Pasteur, and a host of earnest investigators of more recent date and of to-day in clearing up the mysteries of life and disease. Their work stands as a living monument of the Physician as a Scientist.

SCIENTIFIC WORK AND THE BUSY PRACTITIONER.

Permit me to cite a few instances which will prove that some of the very best scientific work has been done by the busy practitioner. Virchow, the founder of modern pathology, accomplished what he did untrammeled by the daily routine work of an active practice. Robert Koch, the father of the new science of bacteriology, has immortalized himself by the bacteriologic researches which he made when a general practitioner at Wollheim, a provincial town in Germany. Nothing he has done since in the well-equipped laboratory, as a professor in the University of Berlin, can ever equal what he accomplished during the spare hours as a struggling village doctor. Billroth, for many years the star of the medical faculty of the University of Vienna, did science the greatest service in the preparation of his wonderful book on "Coccobacteria Septica," published in 1873. His work on "Surgical Pathology" passed through many editions during his lifetime; was translated into nearly all of the living languages; is familiar to every medical student and practitioner, and has been in use in almost every medical college in the world, is but the shadow of his work on bacteriology which foreshadowed the subsequent revelations of the new science upon which is based the modern progress in medicine and surgery. It is a book that has never received the appreciation it deserves, and, I dare say, but very few copies could be found in this country. I have always regarded it as the most important contribution to science by the great surgeon whose name is identical with modern surgery. This book was written soon after he left Zurich for Vienna, a change which brought with it a greatly increased demand on his time by teaching and an enormous private practice.

The success of von Langenbeck as a surgeon and teacher was the outcome of his early scientific training and his own original researches during a long and busy professional career. What made von Volkmann the peer of surgeons was his scientific researches rather than his skill as an operator. The lifework of the late distinguished Professor von Nussbaum was foreshadowed by his graduating thesis. He conceived the idea of restoring sight lost by opacity of the cornea by excising the opacity and inserting a minute glass window. Although his painstaking experiments did not prove of any practical value, the student's work became emblematic of his whole surgical career, which was characterized by the originality of his work and his deep interest and intense enthusiasm in everything pertaining to science. Without a deep knowledge of science Lord Lister would never have discovered the light which has revolutionized surgery.

TWO GREAT SURGEONS OF TO-DAY.

The two greatest surgeons living to-day, von Bergmann and Kocher, are the best examples of how much scientific work the busy practitioner can accomplish, and what it contributes to a successful professional career. Von Bergmann's researches on sepsis and intracranial pressure are contributions to medical literature that would bring luster to the names of men engaged exclusively in the study of pathology. Kocher's experimental work on acute osteomyelitis, and his numerous researches on the relation of micro-organisms to other various surgical diseases have become an important integral part of the new science of bacteriology.

OGSTON, HORSLEY, THIERSCH AND MACEWEN.

Professor Ogston, of Aberdeen, will always be remembered as the discoverer of pus microbes, and Victor Horsley by his experiments on cerebral localization. Thiersch, one of the most profound students of the science of surgery, left behind him as the most important legacy of his scientific work an account of his memorable investigations on the healing of wounds and his classical work on epithelioma. Macewen is best known by his lucid description of intracranial surgical affections.

In our own country the rank and file of original investigators is rapidly increasing. It is with a source of pride that I mention in this connection J. B. Murphy, Jacob Frank, and M. E. Connell and his son Gregory, of our city. Marion Sims made his enviable reputation as a country practitioner and S. D. Gross is best known by his work on intestinal suppuration. The few names that I have mentioned out of hundreds of active practitioners who in recent times have added their good share to the science of medicine should be a sufficient encouragement to the younger members of our profession to combine their practical work with scientific investigations from the very moment they enter upon the practice of medicine. There has been more progress made in the science of medicine during the last two decades than during the thousands of years before, and yet it is just a beginning of what is destined to follow. The harvest has just commenced, and many laborers are needed.

SCIENTIFIC PHYSICIANS WILL ALWAYS REMAIN IN THE FRONT RANK.

Every progressive physician should take a part in unraveling the many mysteries which must be cleared up before medicine can become an exact science. Combined with science, medicine is the noblest of all professions; without science it is the meanest of all trades. A good microscope and a small laboratory have become essential aids in the study of disease, and in the pursuit of original research. The modern physician, then, must be a scientist if it is his ambition to remain in the front rank of the most progressive of all professions.

CHRISTIAN FENGER.

We are paying tribute to-night to an ideal scientific physician. Before our distinguished guest entered on the threshold of his profession, his reputation as a scientist was established. His thesis for the degree of doctor in medicine, on "Carcinoma of the Stomach," indicated the bent of his inquiring mind. He showed by his careful investigations that a direct relation exists between the location of the disease and branches of the pneumogastric nerve; in other words, in explaining one of the clinical phenomena—pain—he demonstrated the involvement of nerves by the carcinomatous process when the disease is at all productive of pain. All of his writings since that time breathe the same spirit of critical inquiry and originality of thought. He has never written anything which has not found a permanent place in medical literature and that is not eagerly sought for by all who respect progress and love science. Much of the time of our guest has been spent in the deadhouse. It is there that he became a master in pathology, a distinction unanimously granted him for more than a quarter of a century. To him anatomy is an open book. Every operation he performs is an anatomical demonstration. I believe I am not going too far when I make the statement that if called on inadvertently to describe any of the intricate physiologic processes he would proceed without hesitation and give the desired information with a clearness and thoroughness that would do credit to a professional physiologist. He is so familiar with the functions of every organ in health that any disturbances caused by disease are quickly recognized, a knowledge upon which depends his acumen as a diagnostician. Take him into a chemical laboratory and he will make analyses and experiments that would fascinate the students and astonish the director. The microscope is our guest's most constant and nearest companion. To him its diagnostic and scientific revelations are a source of constant interest and unalloyed pleasure. As a practical surgeon, he stands pre-eminent. There is no operation he has not performed, no region he has not invaded. Twenty years ago he taught us how to explore the brain systematically and safely in search for abscess. To him belongs the credit of having led the way in this country to successful surgery of the lung. His articles on the surgical affections of the biliary ducts have become common property, and can be read in all living languages. He stands next to Simon and James Israel in renal surgery. There is no one who would pretend to know half as much as he does of the surgery of the ureter. If our guest has any specialty in surgery, it is the abdomen and pelvis. He has performed more difficult pelvic operations than any teacher of gynecology in this city. He was the first man in Chicago who performed vaginal hysterectomy for carcinoma of the uterus.

WHY DO WE HONOR HIM.

What has brought so many of Professor Fenger's friends and admirers together this evening? Is it because he has reached the age of sixty? No! Is it because he has reached the climax of his successful surgical career? No! We are here to tender our congratulations to Fenger, the Scientist. We are here to express our feelings of gratitude to the teacher who taught the young men of our profession in this city how to make a postmortem, and how to use the microscope. We are here to honor the surgeon who planted the banner of aseptic surgery in Chicago, and who has unselfishly and unceasingly instructed its followers in the technique of aseptic operations. We are here to emphasize the meaning and to show our appreciation of the sentiment, "The Physician as a Scientist." History repeats itself. Sixty-seven years ago the distinguished Dr. Hufeland, then the most famous physician in Berlin, was given an ovation after he had been actively engaged in the practice of medicine for half a century. On that impressive occasion a poem was read, and an album containing the autographs of several thousand of his friends and admirers was presented to him. Strangely this treasure came into my possession through the Baum Library. With few changes this poem expresses our feelings toward our honored guest:

Sie senden Dir, ein Kranz—der Erinnerung,
Den Gruss der Heimat, Grüse der fernen Flur,
Sie rufen Dir, im Abendschimmer
Ehrenerheiterter Tage, Heil! zu.

Heil, edler Mensch, Dir! Der, an dem Geisterquell
Der Wissenschaft, des Lebens Geheimnisse,
Balsames voll, in stiller Stunden
Goldene Schalen geschöpft, und hülfreich,

Ein Göttersohn, der frohen Genesungen
Willkommnen Kelch mit tröstender Hand gefüllt,
In heisgequälter Brust des Fiebers
Gluten zu löschen mit kühlem Schlaftrunk.

Heil, tapfrer Kämpfer! Welchem der Sonnengott
Den Pfeil geschärft, der tief in den Drachenkamm
Des frevlen Irrthums siegend eindrang.
Doch in gerechten Triumph versöhnend.

Erfahrner Meister! Der Du die irdische,
Die kurze Bahn, die über der Sterblichen
Verhülltem Gang zum dunkeln Jenseit
Blühend sich wölbt, mit des Sehers Lichtblick

Durchwandeln lehrtest, hier in den Rosenflor,
Hier durch des Weinstocks lachende Traubenpracht,
Hier warmend vor verborgner Natter
Tückischem Biss und des Sumpfes Gifthauch.

Viel sind der Priester, viele dem Opferdienst
Der Kunst geweiht. Des Sehers Begeisterung
Entlockt der Finsterniss den Funken,
Der sich in Flammen vom Staub' emporschwingt.

Und naht Dein Abend? Stralen des Tages nur
Umweben glorreich, Wem die Unsterblichkeit
Den Palmenzweig, von Harfenlauten
Heiter Stimmen umklungen, darbeut.

Die Lehrer leuchten hell, wie des Himmels Glanz,
Und gleich dem Licht urewiger Sterne geht
Der Heldenname niemals unter,
Welcher die Pfleger der Welt verherrlicht.

A SANATORIUM and convalescent home for the soldiers and civilian employees of the government will probably be established at Baguio, 4700 feet above the sea level, five miles south of Trinidad, in the province of Benguet, Philippine Islands. The temperature at this place is low and the climate resembles that of Arizona, Colorado or New Mexico.

THE DANGER OF SPINAL ANESTHESIA.

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Shortly after the introduction of cocain as a local anesthetic, Dr. J. Leonard Corning, of New York, demonstrated that it was possible, under its influence, to remove large tumors and perform amputations. Continuing his researches, he developed, in 1885, a method of injecting the drug into the vertebral canal between the spinous processes where it "should become absorbed by the minute plexuses of veins and so carried to the cord." Quite recently, Professor Bier, of Kiel, has advanced one step in this practice and deposited a solution of cocain within the subarachnoid space. His example was speedily followed by Oberst, Seldovitch and other European surgeons, and, above all, by Tuffier.

This practice is now extending to the United States and other countries. Various reports have been published, narrating its successful application in major operations involving the lower extremities, genital organs and abdominal cavity. Anesthesia ensues within five to ten minutes and continues for half to nearly an hour, or has even been prolonged to five hours in cases of parturition.

Mixing with the cerebrospinal fluid the solution of cocain speedily affects the sensibility so profoundly that, although the sense of touch remains unimpaired or at least is not obliterated, the perception of pain is destroyed.

The subarachnoid space should be quite as good an absorbing medium as the subcutaneous cellular tissue. On one side is a delicate serous membrane and on the other a mesh of capillary blood-vessels, the whole being in direct communication with both spine and brain. It is known that the cerebrospinal fluid is both produced and absorbed with great rapidity. There would seem, therefore, to be every reason why the characteristic physiological action of cocain should be quickly manifested and, indeed, with accentuated power, inasmuch as it is injected in such close proximity to important nerve centers. One writer, Dr. S. Marx, of New York, explicitly says that in a case when he had injected 1/6 of a grain into the canal he got dangerous symptoms of morphin poisoning, "showing how strong is the absorbing power of the spinal fluid." What is true of morphin must be equally true of cocain.

The drug is liable, in excessive doses, to disturb seriously the innervation of the heart and lungs, to depress the circulation, cause rapid and weak cardiac action, and render the respiration labored and shallow, while in some instances it produces thrombi and emboli. Severe toxic manifestations are not always fugitive. The phenomena of acute cocainism have been known, from ordinary hypodermic injections of moderate doses, to extend over a considerable period of time and cause severe distress, if not danger to life. Constant headache, habitual insomnia, vertigo, syncope, dejection of spirits and presentiment of approaching death, prickling and numbness, with other serious symptoms, lasted for several months as a consequence of a single injection of 1/8 grain. Death has resulted from the incautious employment of cocain. It must be remembered, moreover, that this is a treacherous drug. In many individuals there is a peculiar sensibility to its influence, and a small dose may be followed by a severe reaction. I recall the case of a young lady to whom a moderate dose of cocain was given in the form of a suppository. Very pronounced intoxication occurred, with marked intellectual confusion, anxiety and decided depression of the heart's action. If such unexpected results follow the administration by mouth, rectum or hypodermic injection of a quantity far within the limits of supposed safety, I can not but be apprehensive that the successful course of the new operation of spinal anesthesia will be vehemently interrupted by dangerous and even fatal accidents. It is now thrown into the subarachnoid space in a 2 per cent. solution and the quantity usually introduced is equivalent to 1/6 of a grain, although I read of larger amounts—1/5 to 1/4 grain—being employed, or of repeated injections being made.

The operation, indeed, is not always so easy as it has been represented. I have myself been an eye-witness on more than one occasion to prolonged efforts before the vertebral canal and subarachnoid space could be entered, the operators being men of eminence and manipulative ability. Dr. S. Marx, who writes approvingly of the procedure in obstetrics, says: "As a rule the puncture is very easily done, but in some few cases there has been the greatest difficulty in its performance. In one case six distinct punctures were made before the tap revealed fluid. In one case with an antecedent lumbar disease I failed absolutely, and was compelled to make the injection in the dorsal region, and then with good success." When we consider that this author's latest report[1] embraces only 23 cases, the few cases of difficulty will swell into a large proportion. The same writer, furthermore admits that "explorations, versions, extractions, placental removals were readily done, not with quite as great ease as under chloroform, but with greater facility than in a non-narcotized woman." I have seen a single injection give rise to alarming symptoms of respiratory failure. The procedure is likewise productive of marked pain, and in order to avoid this effect, Bier and others have employed Schleich's infiltration anesthesia as a preliminary measure.

A number of writers have made allusion to inconveniences attending the method. In some cases chill and fever have followed the injection. Severe and long-continued headache has been noted in other instances and, in fact, seems to be a common manifestation. Distressing nausea and vomiting have also been excited. In exceptional instances staggering gait and sharp spinal pains were experienced on the day following the injection. In some patients free sweating and in others marked debility have occurred. Numbness and tingling are other accidents which have been mentioned. In some cases anesthesia was not produced by the operation. Writers have generally presumed that this failure indicates that the fluid had not entered the subarachnoid space, but this is scarcely a sufficient explanation. Injections into the subcutaneous tissue cause local anesthesia, and the solution must have been absorbed, although perhaps not so rapidly as if it had penetrated the selected space.

Dr. John B. Murphy, writing in the *Chicago Clinic*, for September, 1900, includes among the advantages of spinal anesthesia, "the avoidance of one of the greatest dangers to surgical procedures at the present time, namely, the primary, intermediate and secondary sequences of the anesthetic, as cardiac phenomena, pulmonary lesions and renal disturbance." Nevertheless, some fatal cases have already occurred from medullary narcosis. Tuffier, reporting to the Thirteenth Inter-

1. Med. Record, Oct. 6, 1900.

national Medical Congress in regard to this operation, stated that death had taken place in five cases. In four of these the fatality could not, in his opinion, be attributed to the operation. The fifth patient had died of asphyxia, due to pulmonary congestion complicating a mitral insufficiency. Gumprecht believes that as a rule the operation is unattended with danger, yet he cites a dozen or more cases in which death had followed. Most of the cases collected by Gumprecht were of intracranial tumor and death was caused almost invariably by respiratory paralysis. Although in any circumstances the patients could not have lived long, yet it is admitted that the puncture was undoubtedly the determining cause of death.

It is conceded by all that the operation should be practiced under the most rigid aseptic precautions. In the present state of surgery, however, the proviso is a matter of course and applies alike to every intervention.

I would not be understood as condemning absolutely the production of spinal anesthesia or as denying that it may have a field of usefulness. It is our duty, however, to be cautious in this matter. One hundred odd cases by one surgeon without a death has a very promising sound, yet experience has been too short and the total number of cases is still too few to warrant positive conclusions. Every operation should be regarded in the light of an experiment. The danger signals should not be underestimated. It is not wise to teach that this procedure is easily performed, painless and free from danger. Such statements do not accurately represent the subject in question. If we reflect on the number of times that a general anesthetic is administered far more often than any statistics exhibit; when we consider, moreover, the number of parturient women who may require more or less anesthesia at different stages of their accouchement and for various reasons, we must acknowledge that a few hundred cases constitute but slender evidence for positive assertions. Gurlt, in his studies of general anesthesia, tabulated 14,506 cases in which ether was used by German surgeons without a death. Julliard collected data relative to several hundred thousand administrations of ether and chloroform. In the presence of such figures we should be extremely circumspect in promulgating advice.

Dr. Corning himself is the latest writer on this subject.[2] From a paper entitled "Some Conservative Jottings Apropos of Spinal Anesthesia," I select the following passages:

> The most recent physiology favors the close reciprocal relations between the cerebrospinal fluid and the circulation of brain and cord. . . . And now a further word or two as to the danger of expecting too much from this discovery and of bringing it once more into the neglect certain to follow in the train of disappointed hopes. First and foremost, it is necessary frankly to look at facts and confess that there is nothing in those till now brought forward remotely to warrant the belief that the days of cerebral or general anesthesia are numbered. Some curtailment in their use there may, ay, doubtless will be, but abdication of their broad dominion—never. Again, it is absolutely necessary to remember that, despite all apparent conformity with the exactions of technique, spinal anesthesia sometimes leaves one in the lurch. To what is this failure to appear ascribable? I do not know, nor have I yet come upon a convincing explanation. Cases are on record, too, in which the anesthesia was not of sufficient duration, and the injections had to be repeated, always a deplorable circumstance. Every one at all conversant with the serious results inevitably following infection of a serous cavity must be profoundly impressed with the necessity of a rigid asepsis. This point has been insisted upon by most if not all recent writers. Yet I foresee that amid the indiscriminate slitting by irresponsible persons, sure to follow in the wake of the conservative achievements of the judicious and the competent, there is likely to be a neglect of those necessary and elaborate rules of antisepsis so necessary to the safety of the subject. Then a procession of gory tales; and a great and useful principle cast into shadow by the misadventures of a herd of venturesome empirics. There will be fatalities; but let there be a concerted effort by the invocation of every known precaution to keep the percentage of mortality as low as possible. Let there be less rivalry of the knife—less endeavor of one to outslit the other—and more attention to improvement of method.

1519 Walnut Street.

2. Med. Record, Oct. 20, 1900.

THE TREATMENT OF ADENOID VEGETATIONS OF THE NASOPHARYNX.*

OTTO T. FREER, M.D.

CHICAGO.

Medical treatment usually is ineffective as far as reduction of the growths is concerned, but as there is often an undoubted connection between lymphoid enlargements in childhood and future tuberculosis of the lung, much can be done to prevent this by general means. The surgical treatment of adenoid vegetation is the one to be considered, therefore, and the first subject that presents itself is whether it is better to employ general anesthesia in operations for removal of the hypertrophied pharyngeal tonsil or not.

The advantages of operation without anesthesia are avoidance of the dangers of enforced insensibility, the fact that the operation loses much of its formidable appearance to the child's parents, and the absence of the disagreeable after-effects of anesthesia. The objections to operation without an anesthetic are many. The first is the pain inflicted. It is comfortable for the operator to imagine that the nasopharynx is not especially sensitive, but there is no reason why this should be so. It is well supplied with branches of the plexus pharyngeus of the vagus, glossopharyngeus and spinal accessory nerves. Those who think this region one of blunt sensibility will find that even mildly irritating applications to the nasopharynx will convince them of the contrary, if they apply them to themselves. Not only is the operation decidedly painful, but the nervous and mental shock it inflicts on a child, the terror it must undergo in being held while its mouth is forced open and an instrument is pushed into remote regions, the sight of the streaming blood, a possible reintroduction of the instrument, all these things will leave a child nervous, timid and distrustful for years. The mental shock is a matter of serious moment. Intense fright has often done serious damage to the nervous system. Without an anesthetic the operation becomes an uncertain one. This is obvious to any one who has compared the knowledge of the condition of a child's nasopharynx obtained by palpation when the child is awake and when it is under an anesthetic. The reflex contractions of the muscles of the soft palate, the levator and tensor palati, the salpingopharyngeus and the constrictors of the pharynx, distort the parts so that it is hard to tell lymphoid protuberances from prominent muscles and folds of mucous membrane, and often where the diagnostic touch has made us think that we have but a small

*Read in a Symposium on Hypertrophy of the Pharyngeal Tonsil, before the Chicago Climatological and Laryngological Association, July 5, 1900.

central adenoid mass, examination under anesthesia will show the fossa of Rosenmüller and the region above the Eustachian tube full of adenoid growths. If we can not locate accurately the adenoid masses without anesthesia, how can we operate with enough precision to remove all that is needed, even if the child's head can be held so that it does not move at all, and this can not generally be accomplished? In fact, there is a risk that the child's struggles make us liable to cut parts that we wish to avoid; injury has been done to the septum and posterior parts of the turbinals, and, what is of greater consequence, to the lateral wall of the nasopharynx with the Eustachian orifices. The rich blood-supply of these parts makes serious hemorrhage a possible sequel. The haste with which the operation has to be done adds still more to the chance of its being incomplete and imperfect.

Therefore, it seems logical to conclude that though a proportion of cases with adenoid vegetations of limited extent can be successfully operated on without general anesthesia, nevertheless the operation is apt to be incomplete, haphazard and imperfect, with a large element of lucky chance in its successful performance, and that consequently general anesthesia is necessary to insure the thorough removal of the entire hypertrophy of the pharyngeal tonsil.

Is it important that the operation should be complete and thorough? Will not the remains of lymphoid tissue left behind disappear by atrophy? They will not only not do so in childhood but will often be the source of a regeneration of the adenoid vegetations. In adolescence or adult life this atrophy may be hoped for, but is not sure to occur. The younger the child the more vigorously will the lymphoid tissue reform. A return of the disease produces lack of confidence in the operation on the part of parents. Parents have said to me: "We have been told that the operation is of no use, as the growths come back, so we have put it off until the child's condition became intolerable." Or we may be told that there has been a recurrence of the disease, so that a second trial of the operation seems hopeless. Many cases doubtless do not come to us at all, because the parents think an operation only of temporary benefit, a needless torment and expense. Therefore, the operation without anesthesia is a mode of procedure adapted to discredit our methods and keep children from receiving the benefit of operation at all.

A second reason for the importance of thoroughness is deafness. Deafness is often caused by adenoids that produce none or but little obstruction to breathing. Usually they are small masses situated just above the Eustachian tubes. To locate these requires a delicacy of touch unattainable without anesthesia. Another reason for thoroughness is the fact that some enlarged pharyngeal tonsils contain tubercular foci. One removed by me was honeycombed with cavities filled with soft, cheesy tubercular matter. Brindel found 8 cases of tuberculosis of the pharyngeal tonsil in a total of 64 removals, Gottstein 4 cases in 33, Pluder and Fischer 5 cases in 32, Luzetti 2 cases in 50, L. Lewlin, 9 cases in 150.

Entrance of tubercular infection through the lymphatic structures of the fauces and pharynx is thought by some to be the most frequent source of pulmonary phthisis in later life, a more frequent mode of infection by far than the much described method by direct inhalation of bacilli into the lungs.

Local anesthesia by means of cocain is practically free from danger, if the cocain is merely sprayed on the parts. This can not be said of the method of injecting cocain solutions directly into the adenoid tissues, as dangerously rapid absorption can take place under these conditions. This latter method would be impossible for children, or would be at least as hard as the operation itself, and neither mode would render insensible a large enough area to make the operation painless. Merely spraying the field of operation with cocain will make the introduction of the instrument but little felt, but will not blunt the sensibility if the nerve-fibers in the depth to which instruments must penetrate.

Of general anesthetics, nitrous oxid does not give us sufficiently long anesthesia for a thorough operation. It has been used as a preliminary to ether anesthesia by Emil Mayer, who claims that it shortens the stage of excitement and makes a minimum of ether needed. He advocates as best the Schleich mixture, but this can be said to have come decidedly out of vogue, as the ether and petroleum-ether evaporates rapidly and leaves a dangerous amount of chloroform.

Chloroform is an unsafe and unaccountable anesthetic. I have had three bad frights from it in operating for removal of the pharyngeal tonsil; Hinckel reports one death and the record of 7 deaths from other sources during adenoid operations; Leyser states that 1 death occurs in 2606 chloroform narcoses. F. Barnhill reports a case of chloroform death one hour after operation for adenoids; W. T. Holloway, of the Central London Throat and Ear Hospital, reported 11 deaths from chloroform up to 1898, after operations on the pharyngeal or faucial tonsils. Casselberry reports a case in the practice of D. Dunne, death one hour after operation. T. K. Hamilton, of Adelaide, South Australia, had such frights from chloroform that he has ceased its use. In administering chloroform Sir Felix Semon advises to let the anesthesia stop short with the abolition of the corneal reflex, while the pharyngeal and laryngeal reflexes are maintained. It is very difficult to keep the anesthesia at this precise stage and if there is not complete enough narcosis to abolish reflex retching the operation is as difficult nearly as without an anesthetic.

Ether has its objections. It can not be used where we have a pre-existing bronchitis; its stage of excitement is long; the somnolency after its use may lead to concealed bleeding with swallowing of the blood until the patient is faint, but it is the safest of the anesthetics. Personal experience has shown me that in many children a quieter, more rapid narcosis is possible with ether than can be obtained with chloroform, and I have had to turn from the latter to ether to get some children to sleep. Ether narcosis is to be preferred to any other, in my opinion.

In operating under narcosis many prefer the position of the hanging head. A more convenient and as safe a position, as far as the flooding of the larynx and trachea with blood is concerned, is one in which the patient lies on his side and chest, close to the edge of the table, while the left arm is placed behind the back. The face looks partly downward toward the floor. In all the operations that I have performed in this position I have never had any trouble from vomiting food or blood getting into the trachea.

Adenoid vegetations can be removed with the postnasal forceps, the sharp spoon, the ring-knife, snare, small ring-knife and the finger nail. The sharp spoon is apt to do injury. Trautmann, its originator, admits that it can tear off the posterior lip of the Eustachian orifice. It scrapes deeply but is apt to leave pieces hanging. It causes severe hemorrhage. The snare is only used in

adults for removal of small pendulous pieces. The finger nail is useful to clean up the field after operation, especially the fossa of Rosenmüller. It is quite inefficient for removal of adenoid masses if these are at all fibrous, as they often are, so that their base is too firm to yield to the finger nail. Complete operation with this instrument is seldom even approximately possible. The Gottstein ring-knife is the most popular of all the instruments used. Its modifications are many, too many to describe. The favorite ones are the Gottstein-Beckmann, the Hartmann, and the Moritz Schmidt ring-knives. This instrument is admirably adapted to do a rapid, showy and incomplete operation. If it is so constructed that it will reach the lymphoid masses just back of the posterior nares it will slight the adenoid masses on the posterior wall opposite the foramen ovale magnum of the occipital bone. It is my experience that in most cases adenoid tissue often to a large, sometimes the chief, amount is found low down on the posterior wall of the nasopharynx. If the shank of the knife is so bent, as Lenzmann has bent it, that the ring-knife will readily reach the posterior wall of the nasopharynx, it can not be made to place itself around those adenoid growths that are found back of the septum. D. Bryson Delavan says: "Time and again I have found that in the hands of many operators the Gottstein knife has merely cut through the lower part of the growth, or removed a certain amount on one side, leaving the other full, or has fairly cleaned the vault, leaving abundant deposits on the posterior and lateral pharyngeal walls." Delavan's experience is seconded by that of Dr. George Torrison of this city, who informed me that he has abandoned the operation with the ring-knife, because the results that he obtained with it were imperfect and uncertain. Since he has used the Löwenberg forceps with anesthesia, his success has been perfect in all cases. Where an adenoid mass occupies only the center of the pharyngeal vault it can be removed quite well with the Gottstein knife, even if not to a good depth, but it is obvious that the very important regions just above the Eustachian tubes and the fossa of Rosenmüller can not be cleared by it. A ring-knife that fits into one nasopharynx will not adapt itself to the next perhaps. The operation with the ring-knife is mechanical and depends much on chance for seizing the tissues to be removed, if used as it usually is, without an anesthetic. It can only take growths with a limited base, yet is supposed to do the operation at one sweep. The ring-knife is too large an instrument to apply itself to the nooks and recesses of the unequal surface of the nasopharynx, especially as this differs so greatly as to shape and size. It is a reasonably safe instrument, but might wound the Eustachian prominences. Three cases of prolonged bleeding are reported after the use of the Gottstein knife, by W. A. Martin. The first occurred one and one-half hours after operation, the second twenty-four hours after, the third nine days after. All of the patients lost much blood. There have never been any serious hemorrhages following the numerous operations for adenoid vegetations done with the Löwenberg forceps in the clinics at Rush Medical College; nor have these ever occurred in the private practice of Dr. E. F. Ingals, myself or others using the method. It is probable that the three cases of severe bleeding reported by Martin were due to injury of the lateral wall of the nasopharynx with the ring-knife, as the vessels of the pharyngeal vault are too insignificant to give rise to much hemorrhage, while the lateral walls of the nasopharynx contain large branches of the ascending pharyngeal, the ascending palatine, and the Vidian arteries. The late occurrence of these hemorrhages can be accounted for by the changes in blood-pressure following operation. The last one, after nine days, was, of course, due to sloughing. As the operation with Gottstein's knife is frequently an incomplete one, recurrences after it are necessarily common. Although I do not use this method, I have seen two cases of recurrence after operation with the ring-knife in which the pharyngeal tonsil was supposed to have been completely removed by distinguished operators, who performed the operation as perfectly and deftly as it can be done. To judge from the literature, about 25 per cent. of the operations with the Gottstein knife are followed by return. Those using that method do not deny that recurrences follow. I state with positiveness that a thorough operation with the Löwenberg and Ingals nasal bone forceps, removes the hypertrophied adenoid tissue for all time. My own experience tells me this, as do our results in the college clinics and the records of the operation in the private practice of Dr. E. F. Ingals, including hundreds of cases, from which no account of a return has come to his knowledge. My knowledge of operation with the Lőwenberg forceps has not taught me to "warn any operator that he must not say that his cases do not recur," as has been said by Tredell, of Melbourne. Far from it, I can assure him that if he removes the growths completely with the Lőwenberg forceps he will positively have no return of the disease, providing he completes the procedure from in front, by removing the adenoid masses commonly found in the posterior nares with nasal cutting forceps. The ring-knife can not possibly reach these pendulous lymphoid excrescences that hang down beside the septum within the nares or fringe the rim of the choanæ. These masses can only be reached from in front, and constitute a very frequent and serious obstruction to breathing. So large are they and so often present that they explain many of the half results obtained with the Gottstein knife.

Adenomatomes need but be mentioned. They are large instruments that operate on the principle of the tonsillotome and can not possibly fit every pharynx, while they can do serious injury on account of their great strength. Their use, and that of the ring-knives, should be confined to operations on adults, and those children where a circumscribed growth can be accurately located. The forceps used for adenoid operations are as numerous as the ring-knives. The Lőwenberg forceps is the type of these. It opens laterally, while the Schuetz modification opens from before backward.

A large and a small-bladed pair of forceps are needed for the operation. The mouth is held open with a gag while with a large-bladed forceps the bulk of the growths on the vault is removed with one or two introductions. The small-bladed instrument, following the finger as a guide, clears out the fossa of Rosenmüller and regions above the Eustachian tube, until the finger feels nothing more of the growths. Whatever masses occur on the posterior wall are to be removed thoroughly. Then Ingals' nasal bone forceps are introduced through each nostril, and while the finger in the nasopharynx presses the small masses usually found within the posterior nares against it, these are cut away. Several introductions of the forceps are generally needed. No operation for adenoid vegetations is complete without this last stage of the performance. Though the finger pressed into the choanæ may at first discover no growths whatever, as soon as the bone forceps are pushed through the nostrils against it these polypoid masses are readily felt. They can not be seized from behind without en-

dangering the septum or turbinals. The comparatively roomy and broad nostrils of children, with their small undeveloped turbinals, offer no obstacle to the bone forceps, which must be passed close to the septum and floor of the nose.

The occlusion of the posterior nares is not invariably due to lymphoid growths. The disuse of the nostril is prone to leave the choanæ narrow, the turbinals encroaching on the septum, while partial diaphragms of mucous membrane may be found, especially closing the upper arch of the posterior nares. Where the posterior nares are in this narrowed condition, dilatation with Ingals' nasal bone forceps is needed, with infraction of the turbinals, if necessary, while with the beak of the forceps the occluding edge of mucous membrane can be cut away. It has been claimed that Löwenberg's forceps remove the tissue too deeply, clear to the basilar fibrocartilage. If this were generally true, it would be better than a superficial removal, and could do no great harm, but even a moderately educated sense of touch and sense of the resistance the tissues offer to the forceps will guard against this, as the adenoid masses come away readily, while the fascia offers strong resistance. The septum may be seized or the turbinals be wounded, the posterior lip of the Eustachian tube may be injured, but it takes an unusual degree of awkwardness to do these things, as the operation is done with the sense of touch to guide us, and these structures are constantly being felt by the finger.

The internal carotid artery in the adult is separated from the nasopharynx by intervening dense connective tissue three-quarters of an inch thick, and it is hard to conceive of its being wounded. It is stated that the hemorrhage at the time of operation is greater, as a rule, than with the Gottstein knife, but if so this is only proportionate to the more thorough removal of tissue. We have never had any serious bleeding in any of our cases, showing that the arteries of the lateral pharyngeal wall are safe from anything but unusual clumsiness. The adenoid growths that are found on the posterior wall of the nasopharynx are generally firm and tougher than those in other locations. In removing these, care must be taken not to pull downward, but upward, with the forceps, lest the mucous membrane be stripped from the posterior wall of the oropharynx. After-treatment is not needed. The parts heal best under the protection of an undisturbed blood-clot.

The importance of the subject must excuse the length of this article. It can not be denied that the operation with the ring-knife has displaced all other methods, but it has not done so because of its excellence. The reason for its prevalence is the ease with which it can be done and the fact that its mechanical qualities prevent its demanding especial skill, in fact, many general practitioners are removing Luschka's tonsil with the ring-knife, and the public and they have come to regard the operation for adenoids as a trifling matter. Its proper performance is certainly nothing of the kind, but requires especial skill and an educated touch that only come from frequent digital examinations of the nasopharynx.

It is the placing of an easy, superficial and imperfect operation in the hands of the general operator that tends to bring the operation for adenoid vegetations into disfavor with the public.

DISCUSSION ON PAPERS OF DRS. PIERCE, CORWIN, MORGENTHAU AND FREER.*

DR. E. FLETCHER INGALS—I wish to ask the first speaker (Dr. Pierce), who considered the anatomy, about the location of the pharyngeal tonsil. I believe he stated that it is above the middle of the Eustachian cushion. While I think that in normal subjects this is undoubteddly correct, yet it is very common to find a good deal of adenoid tissue below this plane. I think that there is some hypertrophy of the adenoid tissue below this plane in at least 10 per cent. of the cases. In other words, there are often considerable masses below the plane of the middle of the Eustachian orifice, as in a case that I operated on to-day, where there were large masses on both sides below the plane of the Eustachian orifices.

The importance of the conditions that are often present with hypertrophy of Luschka's tonsils was referred to by the first speaker, and I do not think they can be magnified too much. The question, however, would naturally arise as to whether these conditions caused it, or whether they were caused by it. But, as has been intimated, there are certain conditions, ordinarily known as scrofula, etc., or conditions in which children are very miserable, that are immediately relieved as soon as the patients are operated on. We have most of us often seen very great improvement after these operations. It is quite common to see these patients gain from 20 to 30 per cent. in weight and general condition after these operations.

My observations do not correspond with the statement made by the second speaker, that enlargement of the pharyngeal tonsil is not uncommon between the ages of 15 and 20, but perhaps this is only a question as to the exact definition of the word "uncommon;" certainly the percentages of cases between 15 and 20 is small in my experience.

Reference has been made by nearly all of the speakers to the relation between hypertrophy of Luschka's tonsil and tuberculosis, i. e., does tuberculosis cause enlargement of Luschka's tonsil, or does it result from the latter? These are questions of much interest, but upon which we have very little definite information. The fact that in a given number of cases of enlargement of Luschka's tonsil, tubercle bacilli, or other evidences of tuberculosis, are found, does not cut much figure in determining the relation of the one to the other. In 125 autopsies made in the Foundlings' Hospital of New York, tubercle bacilli were found in some of the tissues of the body in every case. In a recent editorial in THE JOURNAL the results are given of 500 autopsies in the Zurich Pathologic Institute by Nägeli, which revealed latent or non-fatal tuberculosis in 97 per cent. of these bodies. If these statements are true—and I see no reason to doubt them—the relationship between an enlarged Luschka's tonsil and tuberculosis is probably merely casual.

I heartily agree with the second speaker about the uselessness of removing all enlarged Luschka's tonsils. I think he said that Bosworth was in favor of removing all enlarged Luschka's tonsils. Some physicians are in favor of removing almost anything that is abnormal. This is artistically correct, but so far as the patient is concerned, I do not think it is the best thing to do unless the abnormality causes some definite inconvenience.

Dr. Corwin spoke of the necessity for a guarded prognosis in cases of deafness, where Luschka's tonsil had been enlarged for a long time. This is correct. It is surprising to see how many such cases of deafness are greatly relieved or absolutely cured within a few weeks by the operation.

The symptomatology of this affection was so thoroughly gone into that I have nothing to add to it.

The last speaker spoke of internal medication, a phase of the subject which is so important that we should give it a little more consideration. There are certain conditions in which I believe it is good policy for the physician to recommend internal treatment. I would not recommend anything from financial policy, but there are many parents who are very much afraid of operations, and who are willing to have almost anything done to avoid them. In such cases, if we recommend immediate operation, the people will be frightened into doing nothing. Such persons should be told that an operation would be the best thing to do, but if we find them strongly opposed to it, it is worth while to give them a chance to try internal medication. While, as a rule, internal medication seems to me mere puttering, yet I have seen a number of cases in which,

* For papers of Drs. Pierce, Corwin and Morgenthau, see JOURNAL of Nov. 3, 10 and 17, respectively.

after the administration of syrup of hydriodic acid, or chlorid of calcium, there has been a rapid diminution of the glandular tissue to such an extent that an operation did not appear necessary; however, I do not think such treatment would succeed in many cases. If a child is suffering any serious inconvenience from the growth, or if there is much deafness, we are not justified in giving the people any assurance or reason to hope that the affection may be cured by these temporary measures.

Like the last speaker, I have great fear of anesthetics. Although I have never had a death from the use of any anesthetic in these operations, I recall two or three cases in which I have had considerable difficulty in restoring patients to whom anesthetics have been administered. If any anesthetic could be given without danger I should adopt it at once regardless of inconvenience. The plan of giving nitrous oxid gas and following it immediately with ether ought to work well. While in the East recently I saw nitrous oxid gas and ether used in this way. The gas was admitted to the same bag which was afterward filled by ether vapor, so that the inhaler was not removed at any time from the patient's face. The patient came under the influence of the anesthetic rapidly, and it appeared as though the plan was excellent. Dr. Kyle suggested to me the giving of chloroform with oxygen, the oxygen being passed through the chloroform and inhaled with the vapor of chloroform, taken up in the same manner that oxygen which is to be inhaled is passed through water. I have tried this method several times, but the patient's face was so covered during the administration of the anesthetic that I could not feel safe, therefore I am not very favorably impressed with it. I have used chloroform almost exclusively in these operations, although I realize its great danger. Prof. Edmund Andrews, some twenty-eight years ago, read a paper on this subject in which he gave the death-rate from chloroform narcosis at about one in 1000; from ether, about one in 3500, and from nitrous oxid gas, about one in 75,000. Nitrous oxid gas is not a satisfactory anesthetic, for the reason that the patient is very rigid during the period of anesthesia, so that it is difficult to operate satisfactorily. I have not used other anesthetics enough to know about them.

I can not quite agree with the last speaker in the statement that it must require an unusual degree of awkwardness to cut the posterior lip of the Eustachian orifice. With my finger in the nasopharynx, the Eustachian orifice has often felt like an abnormal growth, and I think that physicians with very little experience might deliberately attempt to remove it, even though they were not awkward.

In removing portions of the growth from low down in the pharynx the last speaker said that the biting should be from below upward, to prevent stripping off the mucous membrane. The plan I adopt to prevent this is to hold the mucous membrane with my finger back of the forceps; I rest my finger on the growth immediately before seizing it with the forceps, keeping it there until I catch the growth behind it; I then press firmly with my finger below and back of the forceps in order to prevent any stripping of the mucous membrane as the tissue is cut and pulled away.

DR. J. HOLINGER—Dr. Freer said that the operation of adenoids is a difficult one and should be reserved entirely for the specialist. I object to that. This operation is not a difficult one: it is one that the general practitioner should be able to perform. If the Doctor has had much experience in general practice he will know that much more difficult problems confront the general practitioner every day than the removal or the diagnosis of adenoids.

Dr. Morgenthau spoke of high palate and V-shaped maxilla as being connected with adenoids. I would like to call the attention of Dr. Morgenthau to a paper by Dr. Grossheintz, in which he gives measurements of a large number of patients. His statements are not mere speculations or suppositions. He found that high palates and V-shaped maxillæ occur in people without adenoids just as often as they do in patients with adenoids.

Although adenoids are very frequent, it is a fact that we know very little about their etiology. Much work has been done to clear up the subject, but few facts have been clearly demonstrated. Among these facts I would mention that tuberculosis has been repeatedly found in the glands, but not as often as we should think. Hypertrophy of Luschka's tonsil may develop in children who have never had any symptoms of it, after scarlet fever, measles and diphtheria. They are general infections of the organism which have as their first point of invasion the upper air-passages, and may be associated with scarlet fever and measles, and run their entire course in the upper air-passages like diphtheria.

To prove that mouth-breathing alone may lead to adenoids, I will give the following history:

A deaf-mute boy, 11 years of age, had sufficient hearing to lead me to think that he might be educated to talk. He was a mouth-breather. I removed a large hypertrophic Luschka's tonsil. I saw the boy six times during the next ten weeks, and he was always breathing through the mouth. I saw him January 22, and again February 6. At these times he could close his mouth and breathe freely through the nose when ordered to do so. February 20 a good deal of mucus had to be removed before he was able to breathe through the nose freely. Even then the tonsils were not quite free. In the early part of April, four months after operation, I received a letter from the mother stating that the boy had been examined by another throat specialist, who had found a recurrence of the growth. This recurrence took place after a period of perfectly free breathing through the nose of at least twenty-seven days. I believe the persistent mouth-breathing in this case was largely responsible for the recurrence.

A different cause for adenoids was found in the following case: A boy, 10 years of age, was operated on twice during the last two years for adenoids, once in a clinic and another time at the office, by two well-known and capable men of this city. I talked the matter over with the mother for an hour and brought forth these points, which are of interest: The father and mother and two younger children are well and living on California avenue in a seven-roomed flat, second story. In the first story is the saloon of his father. Formerly they lived in the country. The boy always felt well as long as he was in the country, but as soon as he came to the city he started to breathe through his mouth and snore at night. What was the reason for this? The air could not be held responsible because the house of the patient was bordering on the prairie on two sides and there was plenty of space in the flat. Therefore, some other cause had to be looked for. I inquired, besides many other things, into every detail of the diet, as to time of meals, quality and quantity of food, and how it was prepared, and could not find anything abnormal until the boy told me that regularly, when he came home from school, he ate several pieces of lunch which was cut up in the saloon. The otherwise intelligent mother could not see anything wrong in this. But I persuaded her that these sausages are usually made of the poorest kind of meat, and contain an over-abundance of spice. No operation was done. The diet was changed. The boy was placed on syrup of iodid of iron, which I often use in this class of cases as an after-treatment, and in a week a marked improvement was noticed, which kept on. I have seen the boy many times since. I am satisfied that the adenoids have disappeared. He sleeps soundly and now breathes through his nose.

I will mention another case, boy P., upon whom I operated, and during four successive consultations at my office I found him breathing through the mouth, with both nostrils closed up. His sister assured me that he could breathe through his nose in sleeping and in waking. One day I called unexpectedly and found that this was true. At the next consultation in my office I found him breathing again through the mouth. In this case a tight collar was the cause of the suspected recurrence of the adenoids. Leaving it off, the patient was instantaneously cured. A simple compression of the neck by the collar interfered with nose-breathing.

While I do not think I can add anything new to our knowledge of the etiology of this disease, yet every one of those cases has been carefully watched and studied, and I am led to think that we can not attribute the recurrence of adenoids to any one cause, but that every factor has to be considered. The question has been studied quite extensively abroad, as to

the influence of conditions under which people live. Every single case must be considered from a broad standpoint. We may find that the disease is due to trouble in some distant part of the body, and we can only expect to effect complete cures by studying every causal factor. The recurrence of adenoids can not be ascribed to incomplete operation. Of course, if an operation is incomplete and large masses or lumps are left behind, recurrence is almost sure to take place. If, on the other hand, very complete and radical operations are performed, recurrences are not so likely to take place.

Dr. Edwin Pynchon—As has been granted by one of the essayists, the etiology of adenoids is more or less clouded in obscurity. It has always occurred to me that the condition of moisture in the nasopharynx, and the retention of secretions, have been important factors in exciting the growth of adenoid tissue and causing its recurrence after operation. All of us have observed cases wherein there were undoubtedly present adenoids after a tonsillotomy was done, and yet shortly thereafter shrinkage of the adenoids took place, which simply emphasizes the statement previously made, that impairment of drainage and interference with ventilation incidentally have more or less to do with promoting the growth of adenoid tissue.

As far as the term "scrofula" is concerned, I consider it a misnomer in this connection, and that it is simply a condition of impaired health due to interference with respiration, which is caused by the enlarged Luschka's tonsil. Furthermore, I will say that I consider the intestinal disturbances of infancy and the so-called disturbances of teething as being to a very large extent due to lymphoid enlargement.

Dr. Corwin spoke of nasal deformities as being a possible cause of adenoids. In my opinion the adenoids always precede the nasal deformities.

As regards the matter of measurements, to which Dr. Holinger referred, I would say that Dr. Talbot, of this city, has made as elaborate experiments in this direction as any one, and the conclusion that he has reached is that the high-arched palate is due to the fact that on account of mouth-breathing the child's inferior maxilla is not brought up, so that the teeth of the lower jaw press against those of the upper jaw, and therefore there is a tendency on the part of the teeth of the upper jaw to grow too far downward. This is the rational explanation he makes in regard to high-arched palates.

As regards the question of whether to advise operation or not, we do not very often have patients brought to our attention unless there is something the matter with them. They are complaining in some way, and if I find present either adenoids or enlarged tonsils, I advise operation. I am not ashamed of classing myself with Bosworth, who has been decried as being too radical. I believe it is the proper thing to remove these growths, and in fact that the line of treatment which we, as rhinologists, should generally follow is to endeavor, as far as possible, to cause each nose and throat we treat to assume as nearly as practicable the form of the ideal standard. On this ground, I do not hesitate to advise the removal of tonsils or adenoids in any case which is brought to my attention.

In reference to the recurrence of adenoids, there is no doubt that the tendency to recurrence is greatly magnified by the incompleteness of the operation. If portions of adenoid tissue are allowed to remain, it is perfectly easy for a recurrence to take place. With the use of the Gottstein curette, owing to its shape, it is very easy to see how difficult it naturally must be to completely remove these growths from the nasopharynx. I have experimented more or less with this curette, and I have arrived at the opinion that the ideal curette should not only cut from above downward, but should be so arranged that it can cut laterally. The cuts from above downward will clean the upper part of the space, whereas the lateral cuts will remove that adenoid tissue which may be lower down.

As to the operation under general anesthesia, I have followed the recommendation of Dr. Keen, of Philadelphia, which is to place the patient in the Trendelenburg position, and after having once done so, I have had no desire to return to any of the previous methods of allowing the head of the patient to drop over the end of the table, or anything of that kind.

The mouth-gag is another little matter which I might with propriety mention. I have recently been using the Ferguson instrument, and have been so well pleased with it that I have sidetracked all the others, including one of my own design.

The danger from the use of chloroform is owing, in my opinion, to the fact that it is often pushed too rapidly. The child holds its breath, and after a while takes a deep inspiration and inhales too large a quantity; consequently death may be said to be due in part to asphyxia.

As regards the use of medicine internally, I believe that its utility is more to improve the general condition than anything else, and it is doubtful whether medicines can be depended on for the correction of the condition; in other words, an operation will finally have to be done.

Dr. Otto J. Stein—In regard to anesthesia in these cases, it is an interesting point for discussion. I would like to say that nitrous oxid gas has proved very successful in my hands, and I had been using it almost exclusively at my clinic. I started to use it simply because everybody else was using some other anesthetic, and I thought it would be a good idea to use an anesthetic which was a little different from that used by other people. I became enamored with the results I obtained from its use. Of course, there are some drawbacks to the giving and taking of the gas. In giving it a number of assistants are necessary. Then, too, it requires a cumbersome apparatus. As far as the taking of the gas is concerned, I consider it the safest of all anesthetics. Its safety is borne out by statistical reports. Last year I abandoned the use of this anesthetic for the reasons just given, and have since then been using ethyl bromid, but as far as the results in operating are concerned, I think I can get as long anesthesia, contrary to the experience of other operators, from the nitrous oxid gas as I do from ethyl bromid. I have repeatedly done two or three operations under one anesthesia, namely, the removal of the tonsil and adenoids. But, as I have said, it requires a number of assistants to use nitrous oxid gas who are familiar with the operator and who know how to administer it. I must say, that I have not seen the ill effects we get from the other anesthetics in the administration of the gas, especially vomiting, which sometimes follows. Vomiting is less from ethyl bromid anesthesia than in those cases where general anesthetics are used, and I have not seen any signs of danger whatsoever from its use.

With regard to hemorrhage during and following these operations, I desire to refer to it because I have had quite recently a case of hemorrhage, and I believe no mention was made of its treatment in any of the papers or by those who have preceded me in the discussion. Some time ago this subject was discussed in the East, and the suprarenal extract was recommended to be used prior to the operation of adenectomy. There was some discussion as to whether this was advisable or not, and some of the speakers were of the opinion, particularly those who had used the suprarenal extract, that it seemed to promote secondary hemorrhage. I did not use the suprarenal extract in my case prior to the operation, but I did so following the operation with very gratifying success. The case was one in which I removed both tonsils and the adenoids. There was not very much hemorrhage at the time of the operation, but after I left the hospital it semed to have increased and kept on increasing until I was called by telephone an hour and a half later and was informed that my patient had lost two quarts of blood. I gave instructions to apply ice to the back of the neck and to use the suprarenal extract if the ice did not do any good. Ice was applied for the first fifteen minutes or more, and as there were no semingly good results from its application, the suprarenal extract was applied, and the interne reported an immediate favorable result.

As to the particular instrument used, in performing this operation, I steadfastly adhere to the various forms of so-called curettes, the Gottstein instrument, or some of its modifications. There are cases, however, particularly in adults with very high vaults, in which I prefer to use a forceps of some kind. I have a modified curette which was made for use on a young woman, probably 18 or 19 years of age, in whose vault I found much difficulty in reaching the mass, after doing the ordinary operation first, and I reached the remainder of the tissue nicely with this instrument. It is probably three

times as long in the bend or angle as the ordinary Gottstein instrument, and is of a much more acute angle.

DR. PIERCE (closing the discussion on his part)—Dr. Ingals, in his remarks, referred to a hypertrophied mass of glandular tissue, while I, in the beginning of my remarks, referred entirely to the normal pharyngeal tonsil. Of course, the line which I drew was empirical in a manner, at the same time I think the majority of pharyngeal tonsils that have not undergone a change will be found above that region.

If I may be allowed a word more, I would say that there are two points that have not been touched on, and which I regard as rather important. First, the diagnostic point that Chiari just referred to, i. e., the mass of adenoid tissue lying on the floor of the nose which can be seen anteriorly. This is a useful point for the general practitioner to remember in diagnosing adenoids. In a great number of cases—I forget the exact number—he found that this mass was always present when hyperplasia of the pharyngeal tonsil existed.

The other point was one brought out by Fraenkel. He reported two cases in the *Archiv für Laryngologie*. They were sent to him for operation. One case had been previously operated on, I think, by some other physician, and the mouth-breathing still persisted. The other case he himself operated on, if I remember rightly, and the mouth-breathing still continued. Examining the cases more carefully, he found that the children were unable to close their mouths on account of a short labial frenum. The lips were kept apart, and the superior upper lip was not only kept away from the lower, but was drawn upward and outward, giving the typical appearance of a mouth-breather. This condition disappeared only on section of the frenum.

DR. FREER (closing the discussion)—I want to say a word or two in regard to placing operations for adenoid vegetations in the hands of general practitioners. I at least have found these operations hard to learn. I do not think that a general operator should undertake to do them any more than that he should attempt an operation for cataract. To my thinking the removal of Luschka's tonsil requires a touch made thoroughly familiar with the parts of the nasopharynx and the abnormalities occurring there, while a knowledge of the anatomy of the parts and of other conditions of disease which may be found in this region is needed and can only be acquired by those who have time and opportunity to devote to their study. Otherwise the result will be imperfect operations, injury inflicted and mistakes in diagnosis, other rarer conditions being taken for adenoid vegetations.

Luschka's tonsil is simply a lymph-gland. What makes lymph-glands hyperplastic? Infection, whether by the tubercle bacillus or streptococci, staphylococci or some other pathogenic microbe. The pharyngeal tonsil is the first lymphatic gland in the group of cervical lymph-glands, and infection first enters here in nasal catarrh or the infectious fevers, as for instance in scarlatina. Infection of the pharyngeal tonsil may be primary with acute swelling of the parts and later infection of the lymph glands of the neck.

The tissue of lymphatic glands is especially prone to sprout, if they are diseased from any cause. We can see this in open buboes or in open lymphatic abscesses, which fill with unhealthy, fungus granulations. In an analogous way the partly-removed pharyngeal tonsil will form a base for the luxurious growth of fungus masses which will soon reproduce what has been removed, if it is visited by fresh infections. Considering this tendency of lymphatic tissue to proliferate and form granulation tissue, the only way to treat a chronically diseased lymphatic gland is to extirpate it, so that its remains can not be the source of its reformation. Therefore, the only proper method of operation of adenoid vegetation is their entire removal by any safe means that will accomplish this purpose.

STERILIZATION OF SPONGES.—We notice in the *Nord Médical,* of September 15, a communication which states that hydrogen peroxid—10 to 12 volumes—even diluted three times, effectively sterilizes sponges in a few minutes.

TUBERCULOSIS OF THE TESTICLE.

WITH SPECIAL CONSIDERATION OF ITS CONSERVATIVE TREATMENT.

JOHN B. MURPHY, M.D.

CHICAGO.

(Continued from p. 1279.)

Hemorrhage from the urethra may occur early or late, and is usually not profuse. The blood is passed with the urine, and without obvious cause, in this latter respect differing from the hemorrhage of renal calculus, which is brought on by severe exercise, such as horseback riding, etc. The source and cause of this hemorrhage are somewhat uncertain, but we believe it is due, as are the symptoms of vesical irritation, to the irritating action of the products of the tubercular process, which are discharged into the prostatic urethra through the vesiculæ seminales. This discharge produces a catarrhal condition of the mucous membrane in the posterior urethra and trigone of the bladder, with, in many cases, erosions and superficial ulcerations. That the vesical irritation and hemorrhage are not manifestations of a tubercular process in the bladder and prostate, we are convinced from clinical observation, as in almost all cases in which these symptoms are present, there is an immediate cessation of them after castration or resection of the epididymis, which could not possibly be the case if they were due to tuberculosis of these parts. This rapid subsidence of the symptoms after operation is illustrated in the majority of cases here reported, but strikingly so in one operated upon 10 years ago. In this case the patient was obliged to urinate every 15 or 20 minutes and was entirely incapacitated for his duties as clergyman. Unilateral castration was performed and vesical symptoms disappeared almost immediately. In a letter received several days ago he reports that his weight is now 260 pounds; there has never been a recurrence of the disease or bladder irritability, and since the operation he has worked steadily.

Hydrocele, which is present in about one-third of the cases, may have been the first symptom to attract the patient's attention. It is rarely large, when due to tuberculosis in the epididymis, and there is but little difficulty presented in diagnosis.

At varying intervals from the onset of the trouble softening of the deposit in the epididymis takes place. This, in the acute cases, may be a few weeks, while in the more chronic ones it may not occur for months or even years after the onset. When the abscess is about to rupture, the skin of the scrotum over the fluctuating mass becomes adherent to it, bluish in color, and finally perforates by a small opening, through which the characteristic caseous material is discharged. There is usually no pain attending this process and but little tenderness, except where it is associated with mixed infection, in which event we have all the manifestations of an acute cellulitis. The sinuses formed by rupture of the abscess cavity may be single or multiple, and situated in different parts of the scrotum. They usually remain open indefinitely, and show no tendency to close spontaneously. The amount of discharge is slight.

Hernia testis is rarely seen at the present time, probably because the cases are operated on at an early stage. It is consequent upon the rupture of a tubercular abscess situated in the testicle proper, and consists simply of tuberculous granulation tissue, which is extruded through the opening, forming a fungus mass of greater or less size.

Constitutional symptoms are present in the majority of cases, though they differ greatly in degree. Some patients present the typical tubercular appearance, while others appear to be in perfect general health. In most of the cases, after the process has been present for some time, there is loss of weight and strength, with perhaps some evening temperature, rarely exceeding 100 F., and night sweats.

The sexual desire is usually unaffected, except in the very severe cases, even though, when both epididymi are involved, there may be no seminal discharge during intercourse.

Examination of the patient may reveal the presence of some old tubercular lesions on other parts of the body, such as lupus scars, cicatrices of the neck, or perhaps the evidences of a healed osteomyelitis. In Case No. 10 of our series the diagnosis at first was somewhat doubtful, because of the rapid growth of the testicular

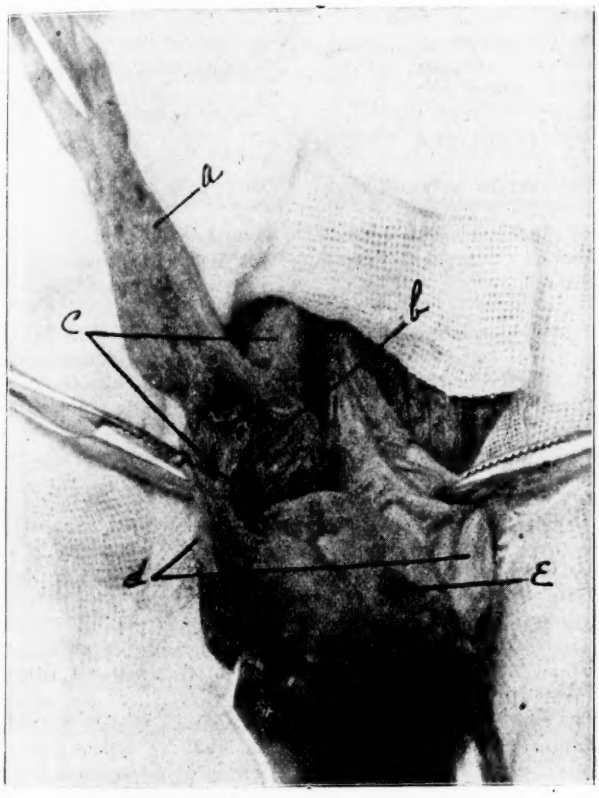

Fig. 11.—Showing epididymis freed from testicle proper. *a.* Epididymis (body). *b.* Globus Minor. *c.* Spermatic artery and veins. *d.* Tunica Vaginalis reflected. *e.* Testicle proper.

tumor, but the presence of a tubercular tendo-synovitis of the hand cleared up all doubt as to its nature.

Rectal examination, for the purpose of ascertaining the condition of the vesiculæ seminales and prostate, should always be made. The seminal vesicles are frequently involved, or if only one is affected, it is more likely to be the one on the side of the affected epididymis. In the early stages the vesicle is soft, swollen, somewhat painful to pressure, and can be outlined throughout its entire length by the examining finger. Later, nodules develop in it, and it presents a very irregular shape, hard, with, perhaps, fluctuating areas in different parts. When both are affected, they can be plainly felt converging toward the prostatic urethra.

It is more difficult to determine tubercular disease of the prostate, especially in its early stages, because the process is usually situated deep in the substance of the gland. In the early stage of the prostatic disease the gland may be somewhat swollen and tender to pressure, while later, when the process is farther advanced, it may be nodular, and present fluctuating areas. Either lateral lobe may be affected singly, or if the entire gland is involved, it may be more advanced on one side than on the other. The inguinal lymph-glands are rarely involved in tubercular disease of the testicle.

Uranalysis.—The condition of the urine will depend on the stage to which the disease has advanced. Usually when the patient presents himself for treatment small quantities of pus and blood will be found in the centrifuged specimen. By staining the pus for tubercle bacilli they can usually be demonstrated, although almost always in very small numbers. It is of great importance in searching for the bacilli to use special staining methods, so that the smegma bacillus will not be mistaken for the tubercular germ. Various processes for differentiating these two organisms have been proposed, the most reliable being that of Bunge and Trantenroth, which consists of extracting the fat from the bacilli by allowing the preparation to remain for three hours in absolute alcohol, then treating it for fifteen minutes with a 5 per cent. solution of chromic

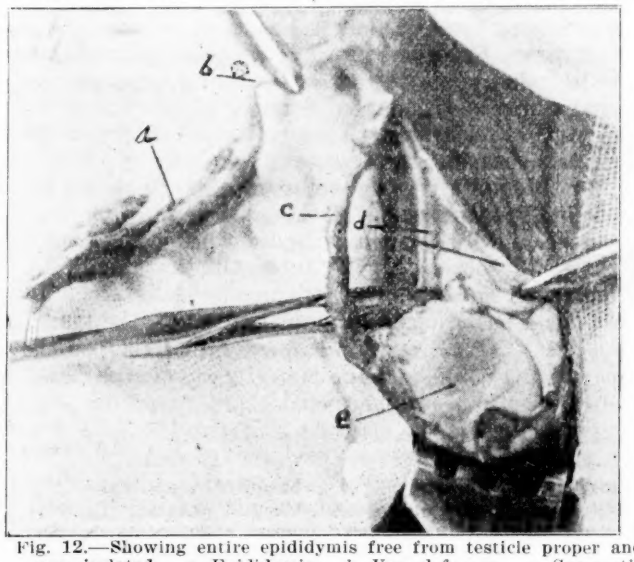

Fig. 12.—Showing entire epididymis free from testicle proper and vas isolated. *a.* Epididymis. *b.* Vas deferens. *c.* Spermatic vessels. *d.* Tunica Vaginalis (reflected). *e.* Testicle proper.

acid, and washing in several changes of water. The preparation is then to be stained with carbol-fuchsin, destained in dilute sulphuric or pure nitric acid for one to three minutes, and further destained and at the same time counterstained, by immersing in a concentrated alcoholic solution of methylene blue for five minutes. By this means the tubercle bacilli retain the stain, while the smegma bacilli become decolorized. Soudan iii, in saturated alcoholic solution, may also be used for differentiating the two.

Complications.—The routes by which extension of the tubercular process takes place are at present the subject of much dispute, many authors claiming that the disease exists primarily above and extends downward to the epididymis along the surface of the mucous membrane, extension, therefore, in an upward direction not taking place. As stated above, it is our opinion that the primary focus is in the epididymis, and that subsequently extension takes place along the lumen of the vas to the vesiculæ seminales, prostate, and in a few cases to the bladder, ureters and kidney.

Jacobson says that after the disease localizes itself in the epididymis it may spread by way of the lymphatics, but this is a very rare exception to the general rule. That it may in rare cases extend by the lymphatics is shown in Sommers' case (quoted by Senn) of a man, aged 36 years, who suffered from tuberculosis of both testicles. The retroperitoneal glands became involved, and later pulmonary tuberculosis developed. In this case the testes were primarily affected, the epididymis remaining free from disease throughout.

Pott's disease of the spine has frequently been observed to follow tuberculosis of the testicle, and this, as well as the cases of general miliary tuberculosis which occasionally develop, must be explained by dissemination of the infectious material through the blood-stream.

DIFFERENTIAL DIAGNOSIS.

In acute cases, where the symptoms come on suddenly and with great intensity, the diagnosis from gonorrheal epididymitis may, at first, be difficult. The principal points to be considered are:

1. The presence of an active gonorrhea, the discharge of which may have suddenly disappeared just before the onset of swelling in the epididymis.

2. Examination of opposite epididymis, vesiculæ seminales and prostate shows absence of nodules.

3. Previous history of patient. In tubercular disease there is frequently a history of recurring mild attacks of epididymitis, or enlarged cervical glands in childhood, osteomyelitis, etc. These are more likely to be absent in the gonorrheal cases.

4. Occasionally it may be impossible to make an immediate diagnosis, and in these we must await further developments, which will occur after the acute swelling has subsided. The tuberculin test might be valuable here, and in all cases where a urethral discharge is present a bacteriologic examination should be made.

Syphilis.—This disease may affect either the testicle proper or the epididymis, or both, in which latter case they are simultaneously involved.

Syphilis of the Epididymis.	*Tuberculosis of the Epididymis.*
1. Infrequently localized.	1. Frequently localized.
2. Diffuse or nodular enlargement, usually the former.	2. Usually nodular. In most cases begins in globus minor, but may commence in globus major.
3. Epididymis not sensitive to pressure.	3. Almost always some tenderness on pressure.
4. Almost always painless.	4. Usually slight aching pain after exercise.
5. No thickening of the spermatic cord.	5. Spermatic cord frequently thickened and nodular.
6. Vesiculæ seminales not involved.	6. Vesiculæ seminales may be nodular.
7. Usually no vesical symptoms.	7. Almost always symptoms of vesical irritation and frequently hemorrhage.
8. Rapid disappearance of lesions under KI and mercury.	8. Antisyphilitic remedies have no effect.
9. Frequently evidence of syphilis elsewhere in the body.	9. No such evidences; may be signs of old tubercular lesions in the lungs, glands, etc.
10. No tubercle bacilli in the urine.	10. Tubercle bacilli may frequently be demonstrated in urine.
Syphilis of Testicle Proper.	*Tuberculosis of Testicle Proper.*
1. Usually begins in the body of the testicle.	1. Body of testicle never primarily affected. Always secondary to epididymitis.
2. Usually diffuse involvement, rarely circumscribed.	2. Disease nearly always circumscribed, having extended from the hilum.
3. Sinuses rarely present, and if they do exist, usually last but a short time.	3. Sinuses more common, and they persist indefinitely.
4. Fungating form quite common.	4. Rare.
5. Usually definite history of primary and secondary manifestations.	5. No such history.
6. Yields promptly to antisyphilitic treatment.	6. No effect from antisyphilitic treatment.

Sarcoma and carcinoma are anatomically two distinct and separate diseases of the testicle. Clinically and practically, however, from the standpoint of diagnosis and treatment, they may be considered as one.

Malignant Disease of the Testicle.	*Tuberculosis of the Testicle.*
1. Usually begins in the body of the testicle as a hard, smooth swelling, which later becomes soft.	1. Tuberculosis always begins in the epididymis as a nodular enlargement.
2. Growth is very rapid, except in the rare scirrhus form.	2. Growth is slow.
3. May attain a very large size.	3. Never attains great size.
4. No inflammatory symptoms present during rapid growth.	4. Usually some inflammatory manifestations, which may be violent, if mixed infection takes place.
5. Veins of scrotum enlarged and prominent. Skin thin and dark colored.	5. Veins not enlarged. Skin, if affected, is thickened and adherent to the epididymis.
6. Tumor not tender to pressure.	6. Nodules usually tender.
7. Vesical symptoms not marked.	7. Vesical symptoms always prominent.
8. If fungating, the ulcerated mass bleeds in a characteristic way.	8. Ulcerating surface has no tendency to bleed profusely.
9. Cord is much more often enlarged and swelling is smooth and even.	9. The cord is nodular and hard.
10. Glands above and below Poupart's ligament may be involved.	10. Almost never involved.
11. May be metastatic tumors in lungs, abdomen, etc.	11. Sometimes evidences of old tubercular lesions elsewhere, as lupus scars, cicatrices in the neck, etc.
12. No tubercle bacilli in urine.	12. Bacilli often present.

In fibrous induration of the epididymis, due to some previous acute or subacute inflammation, the epididymis, while hard and thickened, is not usually nodular, history of the case is entirely different from that of a tubercular disease.

Of the benign tumors of the testicle, fibromata, enchondromata and osteomata are of such rare occurrence that they need not be considered in the differential diagnosis. Enchondroma and osteoma are sometimes secondary developments in sarcoma, adenoma and myxoma. Myomata have been described, but are very rare.

Adenomata, when they undergo cystic degeneration, may have to be considered in making the diagnosis.

Hydrocele usually presents no difficulty in diagnosis, but it must be remembered that it is often a part of the tuberculosis of the epididymis and testicle, as is serous pleural effusion of pulmonary tuberculosis.

Prognosis.—In tuberculosis of the testicle the prognosis depends upon: 1, the age of the patient; 2,

whether the infection is simple or of a mixed character; 3, the location of the primary focus of infection; 4, whether or not other portions of the genito-urinary tract or more distant parts of the body are involved.

The prognosis in children in localized disease of the epididymis, or even where it has extended into the testicle proper, with or without mixed infection, is usually favorable. Encapsulation takes place in the majority of cases without pus infection, and a portion of the testis is preserved. Even where secondary infection has taken place and the abscess cavity discharged externally, we can always hope for the preservation of at least a small portion of the glandular structure.

This tendency in children to encapsulation and limitation of the process is the same as that observed in tuberculosis of other organs in them, with the exceptions of tubercular meningitis and, to a lesser degree, osteomyelitis.

In adult cases many complications are apt to develop, and it is on these that the prognosis will in large part depend. The most important are: 1, abscess formation with resulting sinuses of the scrotum; 2, involvement of the seminal vesicles and prostate; 3, tuberculosis of the bladder (rare). In addition to these we may have foci develop in any other part of the body, and even general miliary tuberculosis has been known to follow a primary lesion in the epididymis. Whether the affection of the seminal vesicles or prostate precedes or follows the testicular disease or not, the clinical fact remains the same, the removal of the testicle or epididymis causes, in a large percentage of the cases, a complete subsidence of the vesical and prostatic symptoms, and a healing of the tubercular process in these parts. From the symptoms presented by some of the patients who have come under our care, it seemed certain that the tuberculosis had extended to the mucosa of the bladder, but on removal of the diseased testicle or epididymis they entirely subsided. While the prognosis is favorable in prostatic and seminal vesicle involvement, it is distinctly unfavorable when the disease has extended to the bladder. In these cases it very frequently further extends to the ureters and kidneys, and the patient soon succumbs to renal or general miliary tuberculosis.

If the epididymis, which is primarily affected, be removed early, it is probable that the other testicle will not become involved. Should it, however, become implicated, the urinary and vesical symptoms will recur and bacilli will again be found in the urine.

As regards life, Jacobson says: "It is to be looked upon as, if left to itself, an ultimately fatal disorder." This, we believe, is an exaggeration, and is by no means invariably the case, as in some the process becomes encapsulated and remains so throughout life. Even where both testicles are involved and discharging sinuses present, the general health may remain good indefinitely, as in a case reported by E. Albert of ten years' standing.

Tubercle bacilli can, in some cases, be demonstrated in the semen, and in this way infection may be transmitted to the female. It is interesting to observe that Jäckh found tubercle bacilli in the semen from healthy testicles in cases of pulmonary tuberculosis.

Treatment.—This may be divided into 1, palliative; 2, radical.

Under palliative treatment we recognize, *a*, rest; *b*, support to the diseased organ; *c*, constitutional treatment; *d*, the various injection methods, with iodoform, chlorid of zinc, etc.; *e*, the method recently advocated by Mauclaire, which consists in excising a section of the spermatic cord between two ligatures.

Radical treatment may be, *a*, orchiectomy; *b*, epididymectomy, either partial or complete, with excision of a part or whole of the vas deferens; *c*, incision and drainage, with or without curettage or cauterization with the thermocautery, chlorid of zinc solution, etc.

The disease in children, as before stated, has a tendency to rapid encapsulation, circumscribing the process to a local caseous nodule in the globus major or minor or, in some cases, even extending into the mediastinum testis, but occasionally there is complete destruction of the epididymis and glandular portion of the testicle proper, nothing remaining after a time but an abscess cavity. In children, too, there is a much greater likelihood of mixed infection than in adults, and it is this which usually causes the rapid destruction mentioned above. Felizet years ago made the statement that in acute genital tuberculosis of children castration is the only operation to be considered, and this statement has never been contradicted. (Longuet.) If suppuration, with destruction of the testicle, has already taken place when first seen by the surgeon, incision and drainage may be the only operation necessary. Early incision and drainage, without curettage, is urgently indicated in children where secondary infection is present to prevent the destruction of the glandular portion, which may take place without it. The rule is, in infants and children, that no radical operation is indicated, and the treatment of these patients should be the same as for tuberculosis of the lymphatic glands, namely, syrup of the iodid of iron, cod-liver oil and calcium lactophosphate. Epididymectomy is practically never called for.

The course of the disease is so varied in adults, from an acute inflammatory process to a chronic indolent, almost painless one, that the palliative treatment of each case will depend on the peculiarities presented. Rest and support are of the greatest importance, as is also the constitutional treatment, which is indicated in all cases of tuberculosis, wherever situated. This consists of an abundance of fresh air and sunshine, moderate exercise, plenty of fats in the food and cod-liver oil. Changes of climate and scene, on which so many authors have laid stress, are probably of no great importance.

If there is no mixed infection and no fistulæ present, iodoform and zinc injections are absolutely contraindicated, and really have no place in the treatment of this disease. They are uncertain, and while, in a few cases, they seem to have been followed by good results, the procedure is not rational.

The method of treatment advocated by Mauclaire in his recent paper has not as yet been tested in a sufficient number of cases to say whether or not it will have a place in the treatment of tuberculosis of the epididymis and testicle. It is certainly not radical, and does not seem to be rational if, as he says, the testicle will be nourished by blood-vessels from the tunica vaginalis, after ligation of the spermatic cord. He, however, has noted disappearance of the nodules in several of his cases, and in almost all of them a subsidence of the vesical symptoms, and healing of the lesions in the vesiculæ seminales and prostate.

(To be continued.)

RHUS FOR INCONTINENCE IN CHILDREN.—The *Gaz. Méd. Belge* quotes Perlis to the effect that rhus aromatica is a certain cure for incontinence in children. He has never known it to fail in his own or others' experience, which includes 156 cases. He prescribes 15 to 60 drops a day fractioned.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, NOVEMBER 24, 1900.

THE SYMPTOMATOLOGY OF FACIAL PARALYSIS.

The facial nerve may be involved in disease at any point between its cortical representation about the inferior portion of the central fissure and its most peripheral distribution, and the symptoms will vary accordingly. A lesion above the facial nucleus in the medulla oblongata will be attended with loss of power in the muscles on the opposite side of the lower part of the face, the occipitofrontal and the orbicular of the eyelids and the corrugator of the brow usually escaping; atrophy is not marked and degenerative electric reactions are not present. There is likely to be, besides, paralysis of the extremities also on the opposite side. When the lesion is situated in the nucleus or in the root or the trunk of the nerve, the palsy will be situated on the same side, and will be flaccid and atrophic in character; and the occipitofrontal and the orbicular of the eyelids and the corrugator of the brow are likely to be paralyzed in addition to the other facial muscles. In accordance with the exact location of the morbid process, the auditory nerve, the intermediate nerve of Wrisberg, the cerebellar peduncle, the pyramidal tract, and the abducens nerve, may also be involved, with the production of deafness, loss of the sense of taste, vertigo, forced movements, hemiplegia of the opposite side, and paralytic convergence of the eye on the same side, respectively. Not rarely sensory and vasomotor disturbances are present on the affected side of the face.

In a case of poliencephalitis attended with facial palsy reported by Oppenheim[1] it was found at a late stage of the disease that on stimulation of the healthy facial nerve with weak electric currents, a contraction occurred in the muscles of the lips, chin and brow, on the opposite or paralyzed side, even when current-strengths were employed that were insufficient to cause contraction of the muscles on the sound side, and were entirely without effect on direct stimulation of the muscles and nerves on the opposite side. This contralateral contraction occurred only in muscles close to the middle line, and was attributed by Oppenheim to innervation of the paralyzed muscles by the healthy facial nerves of the opposite side, as a result perhaps of the outgrowth of new branches from this nerve. Bernhardt,[2] however, dissents from this explanation, having observed that direct or indirect stimulation of the chin-muscles of the healthy side is attended with active contraction of the paralyzed muscles on the opposite side, although the reaction fails to occur when weak currents are employed. He endeavored to explain the phenomenon on a peculiar anatomic arrangement of the muscles of the chin. According to his statements, the upper, inner angle of the depressor of the lower lip interdigitates, as the continuation of the platysma myoides, with the corresponding angle of the same muscle of the opposite side. In addition, some deep bundles of this muscle unite with the opposite elevator muscle of the upper lip. Further, fibers are said to pass beneath the chin, across the middle line, between the depressors of the angle of the mouth of either side.

For the purpose of deciding which of the two views expressed is the correct one Mohr[3] studied four cases of facial paralysis, one of long standing and the others of more recent development. In the first he found the reaction described by Oppenheim well marked, and in one of the others it was partially developed, while in the remaining two it was not present at all. Nor was the reaction obtained in eight patients with healthy facial nerves. This evidence is believed to support the contention of Oppenheim and to oppose that of Bernhardt, and the increased electric irritability of the paralyzed muscles is thought to be due to the greater sensitiveness of the newly developed nerve-fibers.

All of these observers seem to be wholly ignorant of the fact that a similar phenomenon was observed many years ago by Weir Mitchell,[4] both in health and in disease. "I have noticed," says Mitchell, "that in faradizing the chin or lips near (¼ in.) the middle line, the muscles on the other side of the face, and nearest the mesial limit, may be made to contract. This is best seen in a face where, owing to unilateral facial palsy, the muscles of the diseased side do not themselves stir with the current; but it is also to be seen in health, although the muscles immediately under the conductors are apt, by their normal movement, to mask that of the muscles across the middle line. Far more interesting are the results obtained when we use a constant current, and when the patient is a case of complete unilateral face-palsy. When such a case occurs, as we all know, the power to stir the palsied muscles with induced currents fades, and at last ceases, and the response to constant currents becomes unusually good." At first the movement was supposed to be due to reflex disturbance through the centers, but this view was soon abandoned, as it was found that galvanism of the sound nerve-trunk under the ear, while competent, if powerful, to move the sound muscles, did not stir those of the paralyzed side; and besides, the affected nerve was incompetent to transmit the reflected impression. It was concluded, therefore, that the movements caused were due to the action of currents induced between

1 Berliner Klin. Wochenschrift, 1899, No. 29.
2 Ibid., 1899, p. 673.
3 Ibid., 1900, No. 30, p. 861.
4 On the Transmission of Electrical Influences Across the Middle Line of the Body: Trans. Am. Neur. Assn., 1877, Vol. ii.

and beyond the two poles, and that these were enabled to excite the palsied muscles because of the acquired sensitiveness of these latter. Some experiments undertaken by Professor Barker, of the University of Pennsylvania, on the request of Dr. Mitchell, appeared to sustain this explanation.

INCREASED INTEREST IN MEDICAL EDUCATION.

One of the most hopeful signs for the future of medical education in this country is the increased interest in professional education in general taken by college presidents and trained educators. We hear from time to time that presidents of large universities more or less unconsciously find themselves especially deeply engrossed by the interests of the medical departments in the institutions under their charge and by the large and important problems of medical education as a whole. Various factors are at work in favor of medical education from this point of view. The purely pedagogic aspect of medical education has been much neglected until within recent years. The olden custom of fixed courses of annual lectures repeated with recurring regularity as to all details, including the stories, did not offer much of a field for the application of the best principles of the science and art of teaching. The introduction of laboratory teaching changed this, and to-day there is a widespread departure from the medical curriculum of former years, the change in many instances being of so radical a character as to constitute a virtual revolution. Naturally such developments would attract the notice and enlist the interests of professional educators.

In the next place, the constantly increasing requirements for admission to medical study have brought the college and the medical school into closer relation, because so many of the students now enter the medical school by way of the college. In many cases colleges and universities have arranged specially adapted premedical courses, which have become popular. It has been found that certain branches of study formerly pursued exclusively in the medical school, such as chemistry, bacteriology and physiology, to a certain extent could be taught with greater advantage in the college. This has brought up for discussion the relations of the collegiate courses to the medical courses with quite uniform general results of mutual benefit.

And finally the relation of the strictly collegiate course, the preparatory training in general, to the medical and other professional training has been placed on the tapis and constitutes at the present one of the most important subjects for discussion in academic circles. Much thought is given to the wise adjustment of the various departments of education so as to make each best suited for its specific purpose. Hence, the advantages of the medical department of a large university over the isolated medical school become apparent in a striking manner. In his recent book on "College Administration," President Thwing, of Western Reserve University, emphasizes especially the grave importance to American society of the movement toward a general improvement of professional education. The need of the hour is not more doctors or more lawyers, but better ones. It is gratifying to find such a student of education in America as President Thwing conclude that "the next movement in the endowment of American education should be directed toward the schools of law and the schools of medicine." The increased public and special interest in medical education will surely redound to the material advantage of medicine.

ENLARGEMENT OF THE SPLEEN IN INTOXICATIONS AND ACUTE INFECTIOUS DISEASES.

Acute enlargements of the spleen are of much clinical importance. In typhoid fever swelling constitutes one of the foundation stones on which the diagnosis is based. What then may be the cause or causes of the enlargement that is so commonly observed? At the outset it may be put down that in all likelihood there is no one factor, but several, operating probably in different ways, underlying the changes which lead to splenic intumescence. Of the numerous hypotheses advanced from time to time in explanation of this phenomenon, none has received general acceptance. As pointed out by Jawein,[1] malaria, typhoid fever, septic diseases and other conditions in which splenic swelling is usually well marked, all have this in common, that they are associated with destruction of red blood-corpuscles.

From this viewpoint Jawein planned several series of experiments with substances that destroy red corpuscles when introduced into the body. Intoxication with the chlorates of potassium and sodium, and with toluylendiamin, was found to give rise to an increase in the size of the spleen that corresponded accurately enough to the diminution in the red corpuscles; the disintegrating corpuscles are taken up by the cells in the splenic pulp, which enlarge and multiply, and this is associated with active hyperemia of the spleen. These results tally well with the observations recorded in the literature. Splenic swelling does not occur in those intoxications in which there is no destruction of the red corpuscles. It appears that the products of corpuscular disintegration exert a direct stimulus on the cells of the splenic pulp and cause an increased functional activity in these cells. Hyperemia and cell multiplication result. This is a simple, tangible explanation borne out fully by the data at hand. The finer mechanisms through which these changes are brought about under these circumstances as yet elude exact exposition; we know too little concerning the fundamental physicochemic laws of cellular function and proliferation. What has been stated in regard to the relation between various poisons and splenic swelling also seems to hold good with respect to infectious diseases. Those infectious diseases in which there is no enlargement of the

1. Virchow's Archiv, 1900, clxi, 461-507.

spleen show but little diminution of red corpuscles.

The facts bearing on these points are carefully analyzed by Jawein. It is to be remembered that in some of these diseases there may be more or less simple anemia without swelling of the spleen, but in diseases of that character it does not concern actual and excessive destruction of red corpuscles as much as a diminished regeneration of the corpuscles. This is probably the case in tuberculosis and in malignant tumors, in which there is often marked anemia and but little or no splenic swelling. Jawein's experiments and deductions consequently favor a simpler and more direct explanation of swelling of the spleen. Should this view obtain general acceptance, new light would be thrown also on the functions of the normal spleen. An organ that takes the products of corpuscular dissolution in pathologic states is indeed very likely to be directly concerned in removing from the blood corpuscles that go to pieces under physiologic conditions.

ALLOXURIC BASES IN NEPHRITIC CARDIOVASCULAR CHANGES.

Xanthin and hypoxanthin are representative members of the group of alloxuric bases which occur in the urine normally and whose formation and retention are increased in many morbid conditions. They are held by some to play an important part in the causation of many gouty manifestations. Croftan[1] reports that repeated injections under the skin of rabbits of weak, alkaline solutions of xanthin and hypoxanthin produce a typical nephritis, increased arterial pressure and endarteritis—in two cases distinct arteriosclerosis—with hypertrophy of the heart. Should these results be confirmed, an important addition to our rather scanty knowledge concerning the real cause of arteriosclerosis may come from studies along these lines. Abnormal metabolism with increased production of alloxuric bases, as well as renal lesions of whatever character that would lead to retention of alloxuric bases, may be found to play the essential part in production of arteriosclerosis and its consequences.

YELLOW FEVER IN CUBA.

The prevalence of yellow fever this year in Havana has excited some comment and has often been referred to as discrediting the efficacy of the sanitary work done there since the American occupation. In a recent communication to a New York paper, Dr. L. C. Carr, of the United States Army, calls attention to the error of assuming that conditions at Havana are the same as regards this disorder as in other parts of the island. According to him, the eastern section of Cuba has been notably free from the disease this year. In the provinces of Santiago and Puerto Principe, comprising nearly half of the island, there have been so far only four or five cases in 1900: three at Nuevitas, one at Santiago, and one at Gibara. Two at least of these were rather dubious as regards diagnosis. Since yellow fever has in the past been endemic in Santiago, it would certainly seem that the measures initiated by Governor Wood have been effective there. It is not difficult to believe that the greater influx of non-immunes is one cause of the present prevalence of the disease in Havana. They are largely Spanish immigrants and presumably of a class that are not especially regardful of personal health-regulations; it is possible, moreover, that there are other local conditions that are responsible to a greater or less extent.

1. Am. Jour. Med. Sc., 1900, cxx, 592-97.

THE NOBLE GOVERNOR THOMAS.

THE JOURNAL has once before taken notice of the present erratic governor of Colorado, and then it was because of his peculiar stand as regards the medical-practice act passed in that state. His position at that time was one that did no honor to his office or to the constituency that chose him for it, but it was possibly explainable by assumed intellectual defects in his make-up. His veto message reads like the production of a quack—a quack is a fraud, but he may possibly be more of a fool than a knave. No one would expect wisdom from that source, but the facts did not absolutely exclude the possibility of common decency and humanity. Recent events, however, have still further developed his character, and if the facts are truly told there is little room left for charitable surmise. An executive who will deliberately allow a man to be given up to torture, however great his crime may have been, and then plead his legal inability to do otherwise, is fit for more than mere contempt; he deserves the highest punishment for his participation before the act in a most abominable violation of the highest organic law of the land. Unfortunately, the most he and the guilty lesser officials are likely to receive will be to go down in the history of their state and country as worse than cowardly participants in a crime that disgraces the age as well as the community and the state. As a hater of the medical profession we had ranked Governor Thomas with quacks—we would now hesitate to rank them with him.

AGGLUTINATION OF TUBERCLE BACILLUS.

In certain infectious diseases the serum acquires the power of agglutinating the infecting microbe. Applied with practical success in typhoid fever, Arloing, Courmont and others have endeavored to make this test serviceable also in the diagnosis of tuberculosis. A prime requisite for this purpose is homogeneous cultures in which the bacilli are disseminated uniformly, because in cultures on the usual media B. tuberculosis is aggregated into dense masses and clamps. Much work has been given to this end. Arloing and Courmont succeeded quite well by means of cultures on potato soaked in glycerin-water; subcultures on glycerin-bouillon were quite homogeneous, frequent agitation being essential, however, to maintain the even dissemination of the bacilli in the culture-medium. By the action of the serum of tuberculous patients on such cultures the agglutinating reaction has been obtained with a fair degree of constancy. Buard[1] reports success in several instances of tuberculosis not otherwise demonstrable. In fact, the reaction is said to take place in a ratio inverse to the intensity and rapidity of the infection, being less intense and constant the more advanced the cachexia.

1 Jour. de Phys. et Path. Gen., 1900, ii, 797-803.

Buard comes to the conclusion that the serum reaction is really one of the best means of demonstrating the tuberculous infection. The method is therefore thought worthy of trial, especially with a view to rendering it easier of practical application so that it might become available for more general use.

MEDICAL COLLEGE ENDOWMENTS.

Endowments to medical colleges have been in the past among the rarest events in this country; not half a dozen institutions have received any considerable sums, and very few anything at all. It would seem, however, that there is possibly a turn in the tide and that of the many liberal donations poured out for the benefit of almost every kind of public institution some may flow in the channel of medical education. We recently noted the generous gift of Dr. Senn to Rush Medical College. We have now to report those of Drs. Quine and Steele to aid respectively in the support of the medical library and pathologic laboratory of the University of Illinois, in other words, the College of Physicians and Surgeons. That these come from members of its own faculty makes it none the less a welcome sign. It shows the interest that these physicians have in the institution with which their names have been connected from the beginning. There are few who appreciate what the medical profession does for the public good. Were it generally recognized and compared with that portion of its work as proves actually remunerative, it would be universally admitted that of all professions it is the altruistic one *par excellence*. There is no other, not even the clerical, that compares with it in this respect. That the public does not appreciate the fact really makes very little difference. An account is kept of it somewhere and in the long run it will be credited up. There are not many physicians, however, even in the large cities that are able to give large gifts, but there are many public-spirited men who only need an example to set them in the right way. With endowed medical colleges we will have progressed a long step in the way of advancing medical education and medical science, but we do not believe it is in the order of things that the endowment should come entirely out of the medical profession itself.

THE STERILIZATION OF CATHETERS.

The danger of infection from the use of catheters and the difficulty at times in sterilizing them are so well known as not to require elaboration, and any method that promises to obviate these conditions will be given a cordial reception at the hands of surgeons. The problem is a simple one in the case of metallic instruments, as these can be readily, effectively and promptly sterilized by heat; but the difficulty has been especially with the silk, cotton, and rubber catheters, which do not tolerate well the action of high temperatures, as well as of the most efficient disinfectants. Influenced by these considerations, Katzenstein[1] was led to devise a method by means of which it is possible with the aid of formaldehyde vapor to sterilize catheters thoroughly in the course of from ten to twenty minutes. For this purpose an apparatus was constructed consisting of two main parts, one a shallow chamber for the generation of the disinfecting vapor, and the other a repository for the catheters. The former was provided with a detachable, vertical cover in front, while the opposed wall is perforated by a number of openings, which can be closed by slides and terminate posteriorly in cylinders cut with screw-threads for the attachment of the catheters. This chamber is air-tight, in order that the gas generated can escape only through the catheters, and from its posterior wall project shoulders intended for the support of wire shelves for holding the catheters. The second part of the apparatus consists in an extensible chamber provided with openings through which the formaldehyde vapor can escape after it has passed through and over the catheters. Sterilization is effected by exposing three grams of trioxymethylene—polymerized formaldehyde—in the smaller chamber to the temperatures of from 70 to 80 C. for from ten to twenty minutes. The temperature in the repository for the catheters is only from 30 to 40 C. The movement of the formaldehyde vapor is favored by introducing into the openings out of the vaporizing chamber phenylhydrazin, which has a strong affinity for formaldehyde and absorbs the vapors that are so irritating to the respiratory tract. It was found that catheters could be made absolutely sterile by means of this apparatus in the course of ten minutes, and without suffering any injury. As a precaution, the instruments should be vigorously rubbed with sterilized gauze before they are used, in order to remove any possible traces of adherent formaldehyde and they should be thoroughly flushed with water after being used.

1. Berlin. klin. Wochenschr., 1900, No. 37, 818.

THE DANGERS OF HYPNOTISM.

In reply to a question of a correspondent of the *International Journal of Surgery,* Dr Robert T. Morris, of New York, who it appears has had some reputation as a user of hypnotism, gives a brief summary of his views as deduced from his experience with the agency. He says hypnotism should be employed with more caution than we observe in giving chloroform or ether; it seems to weaken the subject's resistance to external impressions for a long time—it may be permanently—and the incautious hypnotizer may be the cause of seriously impaired will-power. When he first took up the subject he found it so easy to hypnotize children and a large majority of adults that he was tempted to employ the method frequently for minor operative work, headaches, etc. He observed later that hypnotic subjects had an uncanny tendency to react to the slightest suggestion of any one who hypnotized them, and he did not care to stand in such relation to other people. As he says, he prefers logical methods in his dealings and does not like to be in the presence of a weak will, fearing that his influence may not be best for the individual. There are probably many conscientious physicians whose experience has been similar to that of Dr. Morris, and who have like him practically abandoned the use of hypnotism. There is a real peril in the pathologic subjection of the will by this agency; it may seriously affect the future of the patient and the chance of this, even though it may be a remote one, should be seriously considered. The possibility of in-

convenience to the hypnotizer is also a real one, but is a secondary matter. Hypnotism is, as Dr. Morris says, "a dangerous resource," and its reckless use and recommendation by enthusiasts and injudicious operators is a matter to be deplored and discouraged by the medical profession. It has really very little value in it to the medical practitioner, but it will always be a method of the charlatan and the impostor, hence its associations are neither agreeable nor beneficial. Even the legitimate use of suggestion has its possible dangers, though they are comparatively insignificant; but those of full-fledged hypnotism are real and more than merely possible, they are probable in a certain class of cases. The therapeutic value of its methods is at best limited to very special cases in which they should be employed only with the greatest circumspection. The fact that they have been used and recommended by a few high authorities does not alter the fact that the result of any extensive adoption of them would probably be only the useless production of a lot of more or less damaged brains.

Medical News.

CALIFORNIA.

MEDICAL OFFICERS at the Presidio General Hospital are to have six new houses for their quarters, built near the hospital.

THE DEATH-RATE of Sacramento for October was 11.20 per 1000 per annum. Only one case of contagious disease was reported.

RIVERSIDE NEW COUNTY HOSPITAL was inspected by the board of supervisors on November 10, and accepted. The hospital will be opened in about two weeks.

THE DEATHS in Los Angeles for October exceeded the reported births by 35. Consumption caused 32 deaths. During the month 44 cases of contagious diseases were reported.

THE GERMAN HOSPITAL, San Francisco, is to cost $250,000, and architects have been invited to submit plans in competition for money prizes amounting to $4000. The buildings will accommodate 200 patients, and will include a main building, isolated consumption, service and administration buildings.

COLORADO.

THE OURAY HOSPITAL profited to the extent of $1000 by the fair which closed on November 5.

VACCINATED CHILDREN only will be admitted to the Denver school where smallpox was discovered a few days ago. To obviate similar trouble in future physicians have been notified to report hereafter every case of chickenpox to the health department.

THE TRUSTEES of the National Jewish Hospital for Consumptives at Denver perfected their organization, elected a board of managers and decided to establish a bureau in each large city, where applications for admission to the hospital can be received and acted on.

CONNECTICUT.

THE EXAMINING COMMITTEE for the State Medical Society met at New Haven, November 13, and examined 21 candidates for the practice of medicine, two of whom were women.

DR. CHARLES J. BARTLETT, professor of pathology and bacteriologist in the Yale Medical School, New Haven, has been appointed medical examiner by Coroner Mix, vice Dr. Moses C. White, deceased.

THE PLANS for the new buildings for Yale Medical School are nearly completed, and work on the new site will begin in a week or two. The new buildings are to be erected on Cedar street, opposite the General Hospital.

A COMMITTEE has been appointed by the New Haven Medical Association to confer with a similar committee from the New Haven Hospital regarding the vexed question of physicians not on the staff, attending cases in the hospital.

SUIT has been brought by a patient from Waterbury against a New Haven physician for $10,000 because, as the plaintiff alleges, the use of medicines wrongfully prescribed by the defendant caused her hair to fall out and spoiled her complexion. The physician replies that the medicines were not employed in accordance with instructions.

THE BULLETIN of the State Board of Health for October shows an annual death-rate of 15.9 per 1000 and that the percentage of deaths under 5 years of age to the total mortality was 26.3. Infectious diseases caused 18.5 per cent. of the total mortality. The secretary advocates the establishment of a hygienic laboratory and the regular inspection of public schools and school children.

ILLINOIS.

JUDGE GARVER, of Rockford, instructed the jury in the case of "Dr." Gordon, charged with practicing medicine without a license, to find for the defendant, who testified that he used no drugs but only "mental suggestion and muscular manipulation."

IT WAS announced at the annual meeting of the Evanston Hospital Association, November 12, that during the last year $25,000 had been added to the endowment fund of the hospital in five sums of $5000 each. Bids have been invited for the construction of the Cable memorial building, for which $25,000 was donated in March last by Mrs. Herman D. Cable.

Chicago.

PROVIDENT HOSPITAL has completed an addition which more than doubles its present capacity and renders it the largest hospital for colored patients in America.

SCARLET FEVER is spreading on the far North-Side, and it is claimed that the increase is due to the failure of attending physicians to make the proper report to the Health Department.

MAURICE PORTER HOSPITAL for sick children was the beneficiary of two lectures delivered last week by Mr. Ernest Seton-Thompson, on "Personality of Wild Animals," and "Wild Animals I Have Seen."

DRS. WILLIAM E. QUINE AND DANIEL A. K. STEELE have each given $25,000 to the medical department of the University of Illinois—College of Physicians and Surgeons—to endow a library and a pathological laboratory respectively. The new building will be erected on the property recently acquired by the college and formerly occupied by the West Division High School.

THE DEATH-RATE for the week ended November 17 was 12.73 per 1000 per annum. The deaths numbered 415, 54 more than the preceding week, but 36 less than in the corresponding week of 1899. Consumption and pneumonia each caused 46 deaths; heart diseases, 35; Bright's disease, 30; acute intestinal diseases, 23; violence, 22; cancer, 21; nervous diseases, 20; diphtheria, 18; bronchitis, 17; and suicide, 4. Of males, 242 died; of females, 173, of children under 1 year, 76; between 1 and 5 years, 45, and over 60 years, 95. Reports were received during the week of 30 cases of scarlet fever and 86 of diphtheria.

INDIANA.

A SILVER MEDAL has been awarded to the State Board of Health for its exhibit at the Paris Exposition.

THE WILL of Dr. William A. Clapp, New Albany, has been probated, and an administrator has been appointed.

DR. ALEMBERT W. BRAYTON, Indianapolis, editor of the *Indiana Medical Journal*, was elected coroner of Marion County, November 6.

THE FIRST PROSECUTION for violation of health laws in Wells County happened, November 15, when Dr. L. A. Spaulding, Bluffton, was fined $10 and costs for failing to report two cases of typhoid fever.

A LAW will, it is hoped, be passed, by the incoming legislature rendering examination obligatory on all from outside the state who desire to practice medicine in Indiana. This legislation is suggested by the State Board of Medical Examination and Registration.

THE REPORT of the trustees of the Eastern Indiana Hospital for the Insane, Richmond, makes the following requests: That the maintenance appropriation and per capita be continued; that $2500 be added to the repair fund; that $62,000 be appropriated for two cottages, $8000 for new boiler house, etc., and $7000 for additional offices, and that 3000 acres of land be purchased for colonization and additional gardens.

IOWA.

MERCY HOSPITAL, Cedar Rapids, was formally opened November 14.

DR. ANSIN E. MURPHEY, Oakley, has obtained by competitive examination the position of surgeon to the Lemhi, Idaho, Indian agency.

DR. LEVI H. SURBER, Indianola, has been appointed a member of the board of pension examiners, vice Dr. Edward L. Baker, resigned.

Dr. Robert E. Conniff, Sioux City, will be editor for the alumni, of the new quarterly to be issued by the Iowa University Medical School.

Dr. Norman E. Mighell has been appointed surgeon of the Iowa Central Railway at Marshalltown, in place of Dr. H. Landis Getz, whose resignation was announced last week.

Dr. Cyrenius C. Powell, South Ottumwa, has been appointed deputy district clerk of Wapello County. To take this position Dr. Powell will resign the office of coroner, which he now holds.

The typhoid-fever outbreak at Ames has been investigated by Dr. Josiah F. Kennedy, Des Moines, secretary of the State Board of Health, who reported that the water-supply was pure, but that he considered the disease due to accumulations of filth and possibly to the use of contaminated milk.

KANSAS.

Winfield now has a hospital completed and equipped, with 24 rooms.

The Attorney-General has decided that the county commissioners of Shawnee county must take charge of all smallpox cases outside of Topeka, and that the city is bound to take care only of the cases occurring within its limits.

Dr. John P. Wood, Coffeyville, is probably the oldest active practitioner in the United States. He was graduated in 1823 from the Transylvania University, Lexington, Ky. He was a surgeon in the Mexican war and has practiced continuously for more than three-quarters of a century.

LOUISIANA.

"The Phagocyte," published in the interests of the medical department of Tulane University, New Orleans, has made its appearance.

In New Orleans during October, 18 cases of diphtheria occurred with 7 deaths; 35 of scarlet fever with 1 death, and 4 of smallpox with 1 death.

The Senses Hospital, New Orleans, treated 3536 patients during October and admitted to its wards 452. The treasurer reported a balance on hand of more than $8000.

The Medical Department of Tulane University, New Orleans, opened on November 5, for its annual session. Dr. Rudolph Matas delivered the opening address, on the "Application of Anesthetics."

MARYLAND.

Dr. Lea, of Berwyn, has been engaged to take charge of the smallpox patients at College Park, Prince George's County, where there is a local endemic of the disease, at a salary of $10 per day.

The County Commissioners of Baltimore county have engaged the following physicians to vaccinate the pupils in the public schools of the county: J. C. Schofield, Charles L. Mattfeldt, and Frank H. Ruhl.

Diphtheria interferes with the attendance in several of the Baltimore County schools. School 1, district 5, has been closed by order of the physician, and school 3, district 4, has been closed by Commissioner Russell, on the advice of two physicians. There is an epidemic of mumps among the pupils of school 3, district 12.

Baltimore.

The Board of Medical Examiners held its regular fall examination in the hall of the medical and Chirurgical Faculty, November 7-10.

The need of a hospital for infectious diseases was recently emphasized when a patient suffering from diphtheria who had been turned out of his room, and had been refused admission to the hospitals, was finally cared for in an empty room in the City Hall annex.

The first meeting of the Johns Hopkins Historical Society was held at the Hospital on Monday, November 12. Papers were read by Dr. William Osler on "The Sympathetic Powder of Sir Kenelm Digby," and by Dr. E. F. Cordell on "The Medicine and Doctors of Horace."

Dr. W. H. Bispham, of Baltimore, has been made assistant-surgeon, U. S. A., and is stationed at Fort Cabanas, Havana, Cuba. He entered the Spanish war as a private in the Fifth Maryland Regiment, was later made a contract surgeon, and has recently passed the medical examination for the assistant surgeoncy.

An interesting program for the winter has been arranged by the Book and Journal club embracing (Nov. 21) "Reminiscenses of an Old New England Surgeon," by Prof. J. Collins Warren, of Harvard University; (Dec. 19) "Harvey as an Embryologist," by Prof. W. K. Brooks, of Johns Hopkins University"; (Feb. 20) "On Some Diseases Bearing Names of Saints," by Dr. Robert Fletcher, of the Surgeon-General's Library; (March 20) "A Notice of the Life and Writings of Valesius de Tarenta," by Dr. F. P. Henry, Hon. Librarian, College of Physicians, Philadelphia.

The Maryland State Dental Association proposes an official examination of the teeth of the pupils in the public schools. The plan is to have its members, armed with sterilized instruments and blank diagrams, examine the children, noting on the diagram the cavities and imperfections of each tooth or teeth, if any. This paper would finally go to the parents or guardians, who would decide whether treatment should be secured. For poor children free treatment is proposed. The dentists here are practically unanimous in favor of the plan. It will be considered by the School Board.

MASSACHUSETTS.

By the completion of Dr. Henry M. Swift's term of service at the Worcester City Hospital, Dr. C. D. Wilkins becomes senior, and Dr. Fred Bryant junior house surgeon; Dr. W. W. McKibben senior and Dr. Downey L. Harris junior house physician.

Dr. Francis D. Donoghue, Boston, whose marriage on October 15, was noted in The Journal, was presented with a chest of silver and a large plate mirror at a banquet held at the Copley Square Hotel, November 10, at which he was the guest of honor.

The entire appropriation for the improvements at the United States Naval Hospital, Chelsea, amounting to $45,000, will be expended for this work. The improvements include the construction of a granite three-story building, repairs to the old buildings, relaying of walks, etc.

The legislature of 1900 passed a law prohibiting the sale of articles containing arsenic, and directed the State Board of Health to make the necessary investigations relative to the existence of arsenic in the articles mentioned in the act, and to adopt such measures as may be deemed necessary to carry out its provisions and to facilitate its enforcement.

MICHIGAN.

The annual report of the State University Hospital has just been completed. It shows that during the year 1957 patients were received at the hospital.

The State Board of Health has received official notification that it has been awarded a gold medal for its exhibit in hygiene at the late International Exposition at Paris.

"Independent" physicians are said to be banded together to resist registration, claiming that the law is unconstitutional. Only 2 of the 1500 "independents" in the state appeared before the board at Lansing. The board has already commenced to take active measures against the "independents," irregulars and other unlicensed practitioners.

Compulsory vaccination has been urged by Secretary Baker, of the State Board of Health, in all the lumber counties of the state. Smallpox now exists in thirteen counties. The common council of Negaunee has already passed an ordinance providing for the immediate vaccination of all who have not been vaccinated within the last four or five years.

MISSOURI.

Dr. William L. Whittington, acting asst.-surgeon United States Army, has returned to his home in St. Joseph, from the Philippine Islands, on sick-leave.

Dr. Joseph J. Lawrence, St. Louis, proprietor and editor of the *Medical Brief*, has purchased a corner site at Fifth Avenue and Eighty-ninth Street, New York, for $140,000.

Dr. Robert M. Funkhouser, presiding officer of the St. Louis Medical Society, has been elected coroner of St. Louis. Dr. Funkhouser polled a large vote and received the hearty support of members of the profession, regardless of party lines.

Hon. A. M. Dockery, who has just been elected governor of Missouri, is also a member of the medical profession, although his interests of late have been more in the line of congressional duties than in the practice of his profession. His record at congress promises for him great success in carrying out the duties of the executive of the State. Both the profession and the State are to be congratulated on his election.

NEW JERSEY.

The Camden Board of Health held a special meeting November 12 to consider the plans submitted for the erection of a municipal hospital for that city. The plans call for three laboratory buildings; administration building and two ward buildings, covered corridors connecting them.

Dr. George H. Fletcher, Atlantic City, who, it is claimed by the secretary of the State Board of Medical Examiners, is not entitled to practice, and whose death certificates have been ordered to be refused, states his side of the case, from which it appears that he is a regular graduate of Harvard University. He asserts that the charges against him are inspired by spite and jealousy.

IN WOODBURY, seven cases of diphtheria have so far been reported. Dr. H. A. Wilson, on behalf of the board of education, offered a resolution to the effect that the board of health placard every house in which there is a case of contagious disease, and that all school rooms be disinfected. In reply the board of health recommended that the schools be closed, and that each room be fumigated with formaldehyde.

DIPHTHERIA prevails to a great extent in certain localities of Camden. On October 26, 53 cases were reported to the bureau of health, and other cases are being found. The disease appears to be so widespread that some have suggested that the public schools be closed. The parochial school of the Immaculate Conception has been ordered closed on account of the epidemic. In order to protect against a further spread of the disease the board of health has ordered yellow placards to be posted on the houses where diphtheria prevails, and have provided a fine of $25 for removal of this placard without warrant.

NEW YORK.

DR. FREDERICK W. CORDES, Copake, has disposed of his practice, and, after a trip abroad, will practice in Brooklyn.

THE *Sanitarian*, of Brooklyn, has been awarded a "Diploma of Honorable Mention" for its exhibit of two bound volumes of 1899, at the International Exposition at Paris.

THE HEALTH BOARD of Palmyra has taken steps against those who disregard its quarantine rules. A man who made a social call at a house quarantined on account of yellow fever, was arrested and fined $5.

FREE PASTEUR TREATMENT will be administered to any resident of Greater New York, at the Willard Parker Hospital, by order of the health department. Persons outside the city will be treated free at the discretion of the board.

THE BOARD OF HEALTH announces that there have been eight or nine deaths in New York City from hydrophobia during the past year—a number far in excess of previous years, the average of late having been only two or three deaths annually. On this account the health authorities announce their readiness to co-operate with the medical profession in investigating doubtful cases.

ONE AMBULANCE SURGEON at least has the satisfaction of knowing that by his readiness in an emergency he has been able to save a life. Dr. Levy, of the Harlem Hospital, was hastily summoned to a woman who was rapidly choking to death. Examination showed that the attack had been brought on by an obstruction in a tracheotomy tube, which she had been wearing for many months. As he had no probe or other suitable instrument at hand at the moment, he snatched a piece of a rattan chair, and with this extemporized bougie, was able to relieve the woman. She had been nearly unconscious at the time of his arrival, but speedily recovered after the tube had been cleared out.

CERTIFIED MILK.

A committee, consisting of Drs. Henry D. Chapin, A. Jacobi and Walter Lester Carr, met a few days ago to take steps towards securing "certified milk" for New York City. The meeting was intended to give an opportunity for informal discussion regarding the milk-supply, and it was attended by many prominent dairymen. Dr. Chapin said that milk, if properly handled, should keep pure and fresh for 60 hours. The idea is to have a competent bacteriologist examine the milk supplied by any dealer who desires such an examination, and if it comes up to the desired standard, issue a certificate to that effect. Certain rules have been drawn up which must be conformed to if the milk is to receive a certificate. These rules provide for cleanliness in stabling, milking, storage and transportation. A number of the dealers present expressed their willingness to supply milk of such high grade, but insisted that this would necessitate raising the price from 8 to 10 cents a quart. It was thought, however, that there would be a large market for good milk at this increased price. Two prominent milk dealers declared openly that they had knowledge of the sale in New York City of large quantities of milk containing preservatives, despite the efforts of the board of health to bar out all such milk. One of the speakers produced as proof of this assertion several circulars advertising "freezine" and "iceine," formaldehyde compounds which were claimed to prevent milk from souring for days, even under the most adverse conditions. It was asserted that these compounds were being openly sold in this city.

Buffalo.

BUFFALO had 330 deaths in October—a death-rate of 11.24 per 1000 per annum. Consumption caused 32 deaths; pneumonia, 13; typhoid fever, 14; diphtheria, 5; nephritis, 12, and violence 26.

THE HEALTH COMMISSIONER has again called the attention of the authorities to the necessity of having a quarantine hospital during the Pan-American Exposition. He wishes to be prepared for the importation of epidemic disease at that time by reason of the cosmopolitan attendance.

HERMAN KELLNER, PH.D., who has been associated with Professor Abbe in the optical works of Carl Zeiss, at Jena, has accepted the position of scientific director of a lens company in this city. The remarkable development of optical science in recent years has been very largely due to the genius of Professor Abbe, and to the labors of the five or six associates who have been trained by him. Their efforts have placed the science of applied optics upon a higher plane and have carried its results to more important conclusions than have been reached before. Dr. Kellner is formulating a new series of microscopic objectives, and is engaged in original investigation in other fields of applied optics.

NORTH CAROLINA.

DR. H. MCKEE TUCKER has succeeded Dr. James R. Rogers as physician to the state penitentiary, Raleigh.

THE BUNCOMBE COUNTY MEDICAL SOCIETY has returned to the Asheville Board of Trade 50 per cent. of the board's donation toward the entertainment of the Mississippi Valley Medical Association.

THE HOSPITAL of the Confederate Soldiers' Home at Raleigh is now completed. It occupies some of the buildings which were used in 1861 as the first regular hospital, established by the late Dr. Burke Haywood.

OHIO.

DR. JOHN FRANCIS, of Hamilton, Dr. Christian Storz, of Toledo, and Dr. Joseph H. Ray, of Coalton, have returned from Europe.

THE MEDICAL DEPARTMENT of Ohio Wesleyan University, Cleveland, received a gift of $10,000 from John D. Rockefeller, November 14.

HEALTH OFFICER Dr. Lawrence C. Grosh, Toledo, was presented with a gold, diamond-mounted badge, by the employees of his department, on November 14.

A PHYSICIAN of Cleveland was fined $350 and costs by Judge Ricks in the United States District Court, November 2, for using the mail to convey unlawful information.

DR. WILLIAM U. COLE, Columbus, was appointed by the mayor Director of Public Safety, November 12; at the meeting of the city council the same evening, it refused to approve Dr. Cole's bond of $25,000, and now the anti-Cole faction talk of impeaching the mayor.

PENNSYLVANIA.

DR. AND MRS. WILLIAM C. SMITH, Linglestown, celebrated their golden wedding, November 12.

A MAN in Lancaster seeks by the medium of the law to obtain $5000 damages from Dr. Herbert R. Bowers, of that city, who, he alleges, set his broken leg improperly.

DR. J. S. WHITE, of Manheim, and Dr. H. H. Brown, of Philadelphia, who have been connected with the medical department in the Philippine Islands, returned home November 13.

SPECIAL HOSPITAL CARS for patients suffering from infectious diseases were advocated at the meeting of the New York State Association of Railway Surgeons, November 15, by Dr. William L. Estes, South Bethlehem.

THE SCHUYLKILL at Reading is now believed to be at its lowest water mark. A greenish scum covers the surface of the water in certain places, and since this stream furnishes water to cities along its course, an epidemic of sickness is feared. In Reading 19 new cases of typhoid were reported for the week ended November 10.

BY DIRECTION of State Veterinarian Pearson a herd of sixteen cattle owned by Cyrus Williams, near Lancaster, were found to be suffering from tuberculosis and were ordered killed.

TYPHOID FEVER is still on the increase in the town of Cementon, near Allentown. Up to November 12, 118 cases had been reported. Dr. M. F. Cawley, the county medical inspector, has made an inspection of the condition there. The public school has been ordered closed.

Philadelphia.

ON THE evening of November 17, Dr. S. Weir Mitchell, physician, novelist and poet was given a reception at the Penn Club.

BY THE WILL of Edward Wiegel property valued at $10,300 has been devised to the German Hospital upon the death of the decedent's widow.

THE COMMITTEE on Elementary Schools of the Board of Education have made an adverse report to the resolution asking the council to give the medical inspectors of the public schools $100 annually for their services.

Dr. John V. Shoemaker, president of the Department of Charities and Corrections, has notified the Director of Public Safety that hereafter the ambulances of the Philadelphia Hospital will be at the service of the police.

Milk inspection is being made at the suggestion of Mr. J. Lewis Good, chief of the Bureau of Health, of the milk supplied by the various dairies of the city. The bacteriological examinations are being made by Drs. A. C. Abbott and A. H. Stewart, of the health department.

Bishop Whittaker, on behalf of the Board of Managers of the Episcopal Hospital, has issued a pastoral letter appealing for funds to pay the current expenses of the Episcopal Hospital. Its increase of work has been so rapid and its responsibilities so great that last year its expenses were $30,000 more than the receipts.

On November 10, articles of incorporation were filed in the county clerk's office for the establishment of an institution to treat tuberculosis. The Pennsylvania Sanitarium Company has made the application and the capital stock is to be $50,000. The new institution will be established at Clifton Heights. The incorporators are Charles Williams, Clifton Heights, Pa.; Rudolph Daetwyler, Camden, N. J., and Howard K. Heritage, Collingwood, N. J.

UTAH.

Dr. Wiley E. Ferrebee, Murray, has been sued for $5000 by a patient for alleged unskilful treatment.

The mortality report of Salt Lake City for October shows 61 deaths, 5 of which were due to consumption; 4 to typhoid fever; 3 to bronchitis, and 3 to pneumonia. Of contagious diseases, 28 cases of scarlet fever were reported; 70 of typhoid fever, 27 of smallpox, and 3 of diphtheria.

Quarantine Officer Dr. Everett O. Jones, at Murray, has indorsed the petition of citizens of Murray and South Cottonwood, that arrangements be made for caring for smallpox patients at home, and a deputy sheriff has been appointed to see that the quarantine in the district is maintained.

A new rule has been promulgated by the Salt Lake City Board of Health, which requires that not only all cases of scarlet fever, diphtheria, whooping cough, smallpox and typhoid fever, but measles, chickenpox and "any other acute contagious disease characterized by an eruption" shall be immediately reported to the department.

GENERAL.

Dr. Alfred Schaper has been called to the Institute of Anatomy at Breslau. He was a pupil of Stiede at Koenigsberg and has been professor of microscopic anatomy at Harvard.

Acting Asst.-Surgeon W. Havelburg reports from Rio de Janeiro, under date of Oct. 15, 1900, that in the treatment of bubonic plague in that city, under Terni, it is assumed that the attack is divided into two stages; 1, the local stage, when the glands are first involved; 2, general infection, after the toxins have passed the lymphatic glands. With this view of the subject, excision of the inflamed glands has been practiced and it is reported that in many cases the temperature dropped and improvement appeared shortly after the operation. Dr. Havelberg promises a further report on this interesting subject.

PAN-AMERICAN CONGRESS.

The following gentlemen are to act as secretaries at the Pan-American Medical Congress, Havana, Dec. 26-29, 1900:

Medicine, Dr. Judson Daland, Philadelphia; Therapeutics, Dr. Hobart A. Hare, Philadelphia; Pediatrics, Dr. I. N. Love, New York City; Mental and nervous diseases, Dr. C. H. Hughes, St. Louis; Medical pedagogy, Dr. Otis K. Newell, New York City; Medical jurisprudence, Dr. H. A. West, Galveston, Tex.; Dermatology and syphilography, Dr. A. Ravogli, Cincinnati; Surgery, Dr. W. P. Nicholson, Atlanta, Ga.; Gynecology and abdominal surgery, Dr. H. P. Newman, Chicago; Orthopedic surgery, Dr. John Ridlon, Chicago; Railway surgery, Dr. Duncan Eve, Nashville, Tenn.; Dental and buccal surgery, Dr. Eugene S. Talbot, Chicago; Anatomy, Dr. Arthur D. Bevan, Chicago; Physiology, Dr. A. P. Brubaker, Philadelphia; Pathology, Dr. Hunter McAlpine, New York City; Ophthalmology, Dr. John E. Weeks, New York City; Laryngology and rhinology, Dr. G. H. Makuen, Philadelphia; Otology, Dr. James T. McKernon, Philadelphia; Obstetrics, Dr. Gustav E. Zinke, Cincinnati; General hygiene and demography, Dr. Alvah Doty, New York City; Military medicine and hygiene, Major Jefferson Kean, U. S. A., Quesnados, Cuba; Marine hygiene and quarantine, Dr. R. M. Woodward, U. S. M.-H. S., Washington, D. C.

TESTIMONIAL TO DR. I. N. LOVE.

We present herewith an illustration of the loving cup presented to Dr. Love on his departure from St. Louis to New York, last October, mention of which has been made before in these columns. Dr. Wiley Broome presented the cup, with the following words:

"It is with pleasure, mixed, however, with regret, that I present you with this Loving Cup as a token of the esteem in which you are held by your brethren of the medical profession of St. Louis, and other friends whose names you will find inscribed on the side of the cup. I want you to accept it with similar feelings with those which prompted the donors to bestow it, as a slight token of their appreciation of your worth. My regrets are, that I, with the others, will miss your kind counsel and social intercourse, which have been so freely bestowed whenever needed. Again may I express the hope that for generations this Loving Cup will be the means of reminding your posterity of the high estimation in which you have been held by those whose names are engraved upon it; and that you go away from our city with your heart full of the feeling that we wish you unbounded success in your new field."

The following are the names of those who were present at the banquet: Drs. C. H. Hughes, F. R. Fry, Spencer Graves, H. S. Cummings, G. M. Phillips, L. E. Newman, W. W. Graves, H. C. Dalton, O. F. Ball, F. E. Wessler, W. B. Shields, Wm. Johnston, Thos. F. Rumbold, W. F. Kier, Y. H. Bond, J. L. Boogher, H. R. Hall, E. H. Cole, George Homan, H. G. Mudd,

J. Young Brown, B. M. Hypes, E. W. Lee, Wiley Broome, and Messrs. Arthur Lambert, K. D. Mellier, F. W. Sultan, Zack Tinker, Thos. Haley and G. B. Rammick.

Dr. W. S. Noblitt, of Honolulu, H. I., it appears, associated with a quack and for this unprofessional conduct lost his license over a year ago. In September Dr. Noblitt brought mandamus proceedings to test the right of the territorial treasurer to refuse him a license, but the presiding judge held that a recommendation from the Board of Health was necessary before it could be granted.

Dr. C. L. Garvin has resigned as executive of the Board of Health of Honolulu. He will resume practice, which he dropped when the epidemic of plague started.

Col. John Van R. Hoff, who was chief surgeon on General Chaffee's staff in China, has returned on the steamer *China*. He will be stationed at Chicago as chief surgeon of the department of the lakes. He reports that the American troops in China are in excellent health in camp at Pekin and in buildings at Tientsin. Nearly all the wounded have been sent to the United States.

YELLOW FEVER IN HAVANA.

According to the report of the sanitary officer of Havana, issued under date of November 8, there were 74 deaths from yellow fever in that city during October. Of these, 8 were Americans, and 51 Spaniards. The total number of cases was 287—62 Americans and 225 Spaniards. The death-rate for

Americans was 12.90, while that for the Spaniards was 22.66. Attention is called in the report to the exaggerated statements regarding the prevalence of the disease which have been sent out by the newspapers. Out of a population of 242,000 there have been since January 1, 968 cases, but the Associated Press published widely the statement that every block in Havana had from one to seventeen cases. There are only 857 occupied blocks in the city. Out of these 397 have had cases of yellow fever. Of the blocks which have had cases, 224 had only one case, and only one or two blocks in the city approximated the numbers given in the newspapers. In Havana there are 16,480 houses of which 709 have had cases of yellow fever. Press dispatches of November 20 state that only 56 cases are under treatment, and among these are 2 Americans. It is expected that by keeping out immigrants the city will soon be entirely rid of it.

TUBERCULOSIS AND TENEMENT HOUSES.

The Tenement House Commission appointed by the last New York legislature held its first public hearing in the Charities Building, New York City. The topic for discussion was, "The Relation of Tuberculosis in the Tenement House Problem." It was discussed at considerable length by Dr. John H. Pryor, of Buffalo, and Dr. Hermann M. Briggs, of New York. The former gentleman said that he had given a good deal of attention to the study of this problem in his own city. In 1893 the condition of the tenements in Buffalo had been fully as bad as they are now here, but more stringent city ordinances had resulted in great improvement. He pointed out that while consumption is both a preventable and a curable disease in its early stages, the death-rate from this disease does not decrease, and each year finds about 6000 cases in the city. He insisted that at least 600 cubic feet of air should be allowed for each adult in a tenement, and that all living rooms should have sunlight. Dr. Biggs exhibited some maps that had been prepared by the board of health with regard to the distribution of consumption. They showed certain centers of infection. For instance, in one block on Cherry street, out of a population of 1000, 144 had died from consumption in four years, and on a block in Pell street, near Mott street, there had been in the same period of time 318 deaths from this disease out of a population of 2000. He was opposed to compelling landlords to build very expensive tenements, for he thought the burden would eventually fall on the poor, who would be crowded into these houses in order to make them pay. The chances of death from fire in a tenement house were far less than the danger of death from consumption. Carpets and wall paper should be prohibited in such dwellings. Mr. Lee Frankel, the manager of the United Hebrew Charities, said that the vast majority of consumptive foreigners whom he saw had contracted the disease in this country, although these people had dragged a miserable existence in their native lands. Dr. Anna Daniel was of the opinion that the sweatshop was an important factor in the dissemination of tuberculosis at the present day in spite of legislation against these pest-holes. She had seen consumptives making cigars and moistening with saliva, and knows that it was common for Italian peddlers to sort their fruit daily in their rooms, and store the fruit under their beds.

CANADA.

PROGRESS OF TORONTO CONSUMPTION SANATORIUM.

The medical health officer of the city, Dr. Sheard, who was asked to report to council on this matter, has handed in his report, the text of which is as follows: "The Local Board of Health should request the city council to submit a by-law to the citizens at the coming municipal elections in January for a grant of $50,000, such sum to be paid to the fund for the purpose when the city treasurer has been handed a similar sum by the philanthropic citizens promoting the interests of the sanatorium; as a condition of this grant, the municipality should not be called on for any additional sum other than the ordinary hospital per diem; that the institution be conducted strictly in accordance with the legislation respecting sanatoria passed at the last session of the provincial parliament; that the institution provide for patients in all stages of the disease, and that it shall be available for the poor patients free of charge; no city patient shall be admitted on a city order unless he or she has been a resident for one year; the sanatorium shall not be distant more than thirty miles from the city, and the land in connection therewith shall not be less than 50 acres." It is altogether likely that the report of the medical health officer will be adopted all along the line.

PEST-HOSPITAL FOR MONTREAL.

A joint meeting of the Boards of Directors of the Montreal General Hospital, the Royal Victoria Hospital, and the Notre Dame Hospital has been held recently, and an appeal made to the corporation of Montreal to construct and equip a new civic hospital for contagious diseases. It is proposed to raise the money for the purpose by special loan, and a conference is being arranged for between the civic authorities and a committee appointed by the boards of directors of the three hospitals, to deal with the matter.

CAUSE OF RECENT TYPHOID OUTBREAK IN MONTREAL.

On October 25 a report was received by the health department of Montreal from Notre Dame Hospital, that two cases of typhoid fever had been received from Mount St. Mary's Convent. An investigation of the institution, which is a boarding school for young ladies, was made and six more were found suffering from the disease. When the milk-supply of the convent came to be inspected it was found that the milk, supplied by a farmer outside the city, was filled with microbes. Two members of the farmer's family were found to be suffering from the disease. In all twenty cases were traced to this source.

FOREIGN.

DR. KARL HOCHSINGER, of Vienna, has received the Cross of the Order of Franz-Josef.

CAPE TOWN, South Africa, reported last week 8 cases of plague and 3 deaths in the densely peopled quarter occupied by natives.

DR. J. WEINLECHNER has resigned the chair of surgery at Vienna, and Dr. A. Vaucher the chair of surgery and gynecology at Geneva.

A CHINESE physician's fee is perhaps the smallest in the world, ranging from 5 to 10 cents, but this is accounted for by the fact that any one can practice.

PROF. G. BRAUN, of Vienna, has retired from his chair of obstetrics, on account of the age limit, and has had a title of nobility conferred upon him by the emperor.

PEKIN sanitary conditions are becoming serious. Fearing that their funerals would be interfered with, the Chinese have retained their dead enclosed in coffins in or about their dwellings.

AMONG the deaths reported abroad we note that of Dr. L. Loew, at Olmütz; Mr. Marini, at Naples; Dr. H. Raab, at Baden, and Dr. Gasdeken, professor of legal medicine at Copenhagen.

AN OUTBREAK of typhoid in Lambeth parish, London, involving 42 persons, 25 of whom were females, is attributed to the common use of four mangles, 26 of the cases having been definitely traced to this source.

THE FIRST volume of the great Latin dictionary, now being compiled by the five chief German Academies of Science, is nearly ready. Each word is treated historically and followed to the sixth century. There are to be twelve volumes of 1000 pages each.

PROFESSOR KOCH, in a recent lecture to his colleagues in Berlin, stated that he believed that mosquitoes passed the malarial parasite from one human body to another, but the parasite was in the body itself. Mosquito nets were useful, but not wholly reliable.

PROF. A. KOSSEL, of Marburg, has been appointed the successor of Prof. W. Kuehne, at Heidelberg.

THE four physicians settled at Mistelbach, a town in Austria, with 3500 inhabitants, have issued a warning to the members of the profession not to respond to the published advertisement of the local sick benefit society for a medical attendant. By advertising for an outsider the society is trying to avoid paying the rates demanded by the resident physicians. Applicants are entreated at least to confer with the national Lower Austria Medical Chamber before accepting the position offered.

PECULIAR RESULTS IN THE TREATMENT OF TYPHOID.

An interesting observation has recently been made by Dr. Renon, of Paris, which formed the subject of a paper read by him before the Hospitals Medical Society of that city. He had under his care last summer at the Necker Hospital 9 cases of typhoid fever which were distributed between the crèche and women's ward in the Peter Block. Of these 9 cases he lost 4 or 44 per cent.; though the disease at first seemed mild, It underwent a sudden change about the sixth day, and of the 5 patients that recovered only one maintained the mild form throughout the disease. These figures can not be put down to the fact that the women were nursing, since only 3 of the 9 were nursing and of these 3 only one died. The treatment, lack of care in nursing, and the severe type of epidemic can be excluded, for in the other wards near by where the disease and other conditions were the same the mortality was nothing to be compared with this. Moreover the mortality in this particular block had been before noticed to be

considerable. During the present year to October 1 its mortality has been 11 out of 19, or 57 per cent., while at the same time in other wards the mortality among the women was five times less. The doctor therefore infers that the proximity of the infants' crèche, in which there was a large amount of enteric trouble in the way of summer diarrheas, etc., was responsible for this mortality. Patients suffering from typhoid fever were affected secondarily with bacteria of infantile and other diarrheal troubles. The observation is a somewhat striking one and suggests additional precautions in the treatment of typhoid fever.

LONDON LETTER.

GLASGOW FREE FROM PLAGUE.

After having lain for three months under the suspicion of being a plague-stricken city, Glasgow is now happily free from the disease. The outbreak was practically confined to one locality, and by the vigorous sanitary measures adopted, was soon placed under effective control. Including doubtful cases, the number of deaths was only 15, which is a very small percentage of the million of inhabitants which live in and around Glasgow. The last patient was admitted to hospital six weeks ago. All the persons who came in contact with plague patients were removed to isolation houses and kept under surveillance. Altogether these numbered 170, and at one time the number reached 120. The last of the plague patients who were in the hospital, numbering 8, were discharged on November 3. According to the agreement of the Powers at the International Sanitary Convention, held at Venice in 1897, Glasgow should be officially recognized as free from plague on November 12, provided no fresh case occurs in the interval. It may be remembered that the first case occurred on August 3, when a child and its grandmother were affected. They died respectively on August 7 and 9, the cause being believed to be enteric fever. The woman's husband sickened on August 12 but was not admitted to hospital until August 27, under the diagnosis of "enteric fever," but the hospital authorities recognized the disease as plague. Altogether 27 persons were removed to hospital. One gave birth to a child, which died; this, with 7 other patients, bring the number of deaths up to 8.

FORMER EPIDEMICS OF PLAGUE IN GREAT BRITAIN.

The Glasgow outbreak is the first instance of the appearance of plague in these islands since the days of the Stuarts. The last was the memorable one of 1665, which Defoe has immortalized in his great work. Sporadic cases occurred for a few years after that period, and a column was left for plague cases in the bills of mortality until 1703. But these were only lingering reminiscences of the fearful period. For two centuries we have been absolutely free from the disease. There is a widespread belief that the epidemic of 1665 was the first instance in which plague ever got a real foothold. Stow mentions an epidemic in the reign of Edward III, which created great devastation, "leaving scarcely a tenth person living"—an obvious exaggeration. Another visitation in the reign of Henry IV is said to have carried off 30,000 persons, and another severer one in 1500 is said to have caused 30,000 deaths in London alone. Throughout the sixteenth century plague showed repeatedly its dread power. In 1562-3 there was an epidemic, followed by a severer one in 1581, which lasted three summers. From that year till the end of the century the disease may be said to have been more or less epidemic. The year 1603 was memorable for a frightful outbreak in Westminster, where 451 persons were buried at the public expense in a few months. This was but the prelude to the graver visitations of 1625 and 1665, which between them carried away 141,000 persons.

THE SOUTH AFRICAN HOSPITALS COMMISSION.

The commission, having returned from South Africa, has resumed its sittings at Burlington House, after an absence of three months at the seat of war. The last and forty-second sitting has been held, after which the commissioners will prepare their report. Mrs. Richard Chamberlain, sister-in-law of the colonial secretary, who has made herself remarkable by the vehemence of her charges against the army-surgeons, was the only witness examined. She said that she landed in South Africa in November, 1899, and had visited Woodstock, Rodebosche and king, but only considered herself an authority on No. 1 Hospital at Wynberg, Cape Town. She was told on three occasions very politely that no visitors were allowed. She ultimately got an order from General Walker to visit, but not from the principal medical officer. She said that the whole place was in a horrible muddle; that there was no organization, though there was unlimited money and unlimited stores; that they were short of every necessary utensil, from cups and saucers to bed pans; that they were short of nurses, yet Cape Town was full of them, but "red tape" prevented them being employed; that the patients were filthy, and the hospitals swarmed with vermin; that orderlies took the sheets of typhoid patients, washed them in cold water and used them again without disinfection.

Correspondence.

Grooved Director for Vaginal Hysterectomy.

INDIANAPOLIS, Nov. 17, 1900.

To the Editor:—I am very much surprised to read in your issue of November 17 an article by Dr. E. D. Ferguson, of Troy, N. Y., in which he describes a grooved director for vaginal hysterectomy that in every essential feature is identical with the grooved staff devised by Dr. Joseph Eastman twelve years ago.

It is only fair to Dr. Ferguson to assume that he was not aware that he had been antedated twelve years in his invention, although it must be admitted that his acquaintance with the various methods of vaginal hysterectomy was not quite as wide as it might have been before placing his grooved director before the profession.

The staff devised by Dr. Joseph Eastman has been described and illustrated in such prominent medical journals as the *New York Medical Record* of April 1, 1893, the *American Gynecological and Obstetrical Journal* of April, 1898, and numerous less prominent publications.

He has operated, using this staff, in Chicago and Philadelphia, such well-known men as J. B. Murphy, F. Henrotin, F. M. Martin and H. P. Newman, of the former, and E. E. Montgomery of the latter city being present.

The staff is illustrated in the surgical-instrument catalogue of the W. H. Armstrong Co., Indianapolis, and the A. S. Aloe Co., of St. Louis. The instrument as used by Dr. Eastman for twelve years is identical in idea, form, detail, purpose and method of use with that described by Dr. Ferguson.

I trust he will accept this note in the same kindly spirit in which it is written. Very sincerely,

THOS. B. EASTMAN, M.D.

Physicians Impersonated.

CHARLESTON, S. C., Nov. 14, 1900.

To the Editor:—Dr. A. R. Shands, of Washington, D. C., secretary of the committee on arrangements of the last American Congress of Physicians and Surgeons, writes me that a man, claiming to be myself, and to have attended the meeting of the congress in May last, has been victimizing many of the profession of that city by pretending to be in distress and borrowing money from them. He claims to have many friends in Richmond, Va. The doctor describes the man as between 60 and 70 years old, clean face, heavy gray mustache, about 5 feet 10 inches tall, and rather spare build. I know of men, in other cities, in former years, who have been victimized in a similar manner, and in one instance the thief proved to be a former governor of this state under carpet-bag rule, and the above description I am told would apply to this same individual.

I was personated many years ago and one of my friends in New York City was victimized for a small amount. The thief was never caught. There should be some way in which physicians could protect themselves from this class of scoundrels. I hope that you will give this as much publicity as possible, so that the profession may be put on their guard and perhaps this thief may be arrested.

Yours respectfully, WALTER P. PORCHER, M.D.

Marriages.

EDWARD F. BRUCE, M.D., Pensacola, Fla., to Miss Minna Frotscher, of New Orleans, La., November 7.

JOHN H. SLOAN, M.D., Santa Fe, N.M., to Miss Aletta Early, Des Moines, Iowa, November 14.

JESSE RAMSBURGH, M.D., to Miss Edith Roberts, both of Washington, D. C., November 21.

IRVING PHILLIPS LYON, M.D., Buffalo, N. Y., to Miss Kate P. Lathrop, of Baltimore, Md., October 23, in New York City.

GEORGE W. DOBBIN, M.D., Baltimore, to Miss Beatrice Dunderdale, of Perth Amboy, N. J., October 10.

FRANK WARD HICKIN, M.D., to Miss Gertrude May Throssell, both of Cleveland, Ohio, November 8.

FRED WHITNEY DAVIS, M.D., Scranton, Pa., to Miss Edith Scott, of Bloomfield, N. J., November 6. They will reside at East Orange, N. J.

Deaths and Obituaries.

HORACE TRACY HANKS, M.D., Albany, N. Y., 1861, was born at Randolph, Vt., June 27, 1837, and died at his home in New York City, November 18. Soon after graduation he became house surgeon to the Albany City Hospital, where he remained until appointed an assistant-surgeon of the 30th N. Y. Volunteer Infantry, in which capacity he served in the Armory Square Hospital, Washington, D. C. He was also at the front during the battles of Fredericksburg and Chancellorsville. After his muster out he remained in Royalton, Mass., until 1868, when he removed to New York. In 1872 he became identified with the Demilt dispensary in its gynecological clinic and for ten years was conspicuous for both the quality and amount of his work. He also became active in many medical societies, devised many special instruments, wrote much, held positions of responsibility, and was often quoted as an authority, particularly in his work as surgeon of the Women's Hospital. As a member of the AMERICAN MEDICAL ASSOCIATION he served more than once as a delegate, and was much interested in its work.

HENRY DRURY NOYES, M.D., College of Physicians and Surgeons, N. Y., 1855, of New York City, at Mount Washington, Mass., November 12, aged 68. He was a well-known ophthalmologist, a leading specialist and a member of many societies and of the AMERICAN MEDICAL ASSOCIATION. He was regarded as an expert in medicolegal circles, and his text-book on diseases of the eye is a standard work.

WILLIAM MARSHALL, M.D., Jefferson Medical College, Philadelphia, 1847, president of the Delaware State Medical Society in 1869 and 1870, a member of the AMERICAN MEDICAL ASSOCIATION, secretary of the State Board of Health in 1879, and surgeon of the Sixth Delaware Volunteer Infantry in the Civil War, at his home, Milford, Del., after an illness of two years, November 9, aged 73.

NATHANIEL P. RICE, M.D., Harvard Medical School, from paralysis, at a sanatorium in New York, November 10, aged 72. He served through the Civil War as a surgeon in the regular establishment and was for two years medical director in Virginia and North Carolina.

FRANCIS M. CONFER, M.D., Rush Medical College, 1882, a prominent physician of Monroe, Wis., and a member of the State Medical Society and the AMERICAN MEDICAL ASSOCIATION, from typhoid fever, at his home, November 11, aged 46.

FETTERMAN W. CONN, M.D., College of Physicians and Surgeons, New York, 1871, who formerly practiced at Virginia City, Nev., at his home, Napa, Cal., November 4, from epilepsy, aged 60.

Z. HAWLEY MARSH, M.D., Jefferson Medical College, Philadelphia, 1836, at his home, Howell, Mich., where he had practiced for more than half a century, October 26, aged 89.

GEORGE K. CROSTHWAITE, M.D., Trinity Medical College, Toronto, 1889, late of Hamilton, Ont., by gunshot-wound, self-inflicted, at Chicago, November 14, aged 34.

WILLIAM A. MOSGROVE, M.D., Miami Medical College, Cincinnati, 1873, from accidental or self-inflicted gunshot wound, at his home, Urbana, Ohio, November 8, aged 50.

EDWIN P. SNOW, M.D., Medical School of Maine, Brunswick, 1849, at his home in Atkinson, Me., where he had practiced for more than half a century, November 10.

HENRY A. LOOK, M.D., Western Pennsylvania Medical College, Pittsburg, 1890, at Allegheny, from a cancer of the tongue, November 12, aged 35.

JAMES S. WALTERS, M.D., M.R.C.S. England, 1869, from diabetes and inflammatory rheumatism, at his home in Pittsburg, Pa., November 8, aged 54.

HENRY GEROULD, M.D., Western Reserve University, Cleveland, Ohio, 1864, at his home in Cleveland, from apoplexy, November 10, aged 71.

WILLIAM T. COLLINS, M.D., Jefferson Medical College, 1857, suddenly, at his home in Camden, N. J., November 10, from rheumatism, aged 71.

JOHN R. SCOTT, M.D., St. Joseph Hospital Medical College, St. Joseph, Mo., at his home, Leona, Kan., after a short illness, November 5.

JAMES N. LOUGHRY, M.D., Jefferson Medical College, at his home in Pittsburg, Pa., after a short illness, November 8, aged 65.

SALOME MERRITT, M.D., New York Free Medical College for Women, 1874, at her home, Somerville, Mass., November 7, aged 57.

CHRISTIAN P. AHLSTROM, M.D., University of Buffalo, 1884, at New York, from asphyxiation by coal gas, November 15, aged 40.

ROBERT R. WASHBURN, M.D., Medical College of Indiana, 1886, at his home in Waldron, Ind., November 11, aged 67.

JAMES E. BLAND, M.D., University of Virginia, 1856, at his home near Shanghai, Va., November 8, aged 66.

Societies.

HOLYOKE (Mass.) PHYSICIANS met November 14 and temporarily organized, with Dr. Carl A. Allen as chairman and Dr. John J. McCabe as secretary.

THE LACKAWANNA (Pa.) MEDICAL SOCIETY, at its meeting at Scranton, November 13, decided to form a union, to establish a fee-table and to blacklist all delinquent debtors.

THE DETROIT (Mich.) PHYSICIANS' ASSOCIATION held its first business meeting November 12 and elected Dr. Guy L. Kiefer president, and Dr. Walter J. Cree, secretary. The association already has more than 100 members.

THE MIDDLETOWN (Conn.) CENTRAL MEDICAL ASSOCIATION has been revived. A meeting was held on November 8. Thirteen new members were elected, and Dr. J. Francis Calef was elected secretary and treasurer.

THE SANGAMON COUNTY (Ill.) MEDICAL SOCIETY held its annual meeting at Springfield, November 12, and elected the following officers: Dr. J. Norman Dixon, president; Dr. Albert L. Brittin, Athens, vice-president; Dr. B. Barrett Griffith, secretary, and Dr. Percy L. Taylor, treasurer.

THE ST. LOUIS ACADEMY OF MEDICAL AND SURGICAL SCIENCE, at its last meeting, elected Dr. Emory Lanphear, president; Drs. Carl Pesold and Harry S. P. Lare, vice-presidents; Dr. Orrill L. Suggett, secretary; Dr. George M. Phillips, treasurer; Dr. William Porter, orator, and Dr. Harry G. Nicks, librarian.

THE WABASH RAILWAY SURGICAL ASSOCIATION held its annual meeting at St. Louis, November 8, and elected the following officers: Dr. Edward H. Griswold, Peru, Ind., president; Dr. Smith A. Spilman, Ottumwa, Iowa, vice-president, and Dr. Christian B. Stemen, Fort Wayne, Ind., secretary and treasurer.

THE GENESEE COUNTY (N. Y.) MEDICAL ASSOCIATION held its annual meeting at Batavia, November 7, and elected the following officers: Dr. Morris W. Townsend, Bergen, president; Dr. Emerson E. Snow, Batavia, vice-president, and Dr. Annie M. Cheney, Batavia, secretary and treasurer.

THE BUCKS COUNTY (Pa.) MEDICAL SOCIETY held its annual meeting at Doylestown, November 7, and elected Dr. George A. Parker, Southampton, president; Drs. John A. Crewitt, Newtown, and George M. Grim, Ottsville, vice-presidents, and Dr. A. F. Myers, Blooming Glen, secretary and treasurer.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION has elected the following officers: President, Mr. Manning Simons, Charleston; vice-president, Drs. George H. Noble, Atlanta, and L. C. Bosher, Richmond; secretary, Dr. W. D. Haggard, Jr., Nashville; treasurer, Dr. F. W. McRae, Atlanta. Richmond, Va., was selected as the place of next meeting; third Tuesday in November, 1901.

THE FOX RIVER VALLEY (Ill.) MEDICAL ASSOCIATION held its seventy-first semi-annual meeting at Aurora, November 13, president Dr. James E. Bumstead, Dundee, in the chair. A

committee consisting of Drs. Hawley, Chicago, and Henry J. Gahagan, Elgin, was appointed to look into the matter of reorganization. The following officers were elected: Dr. Catherine B. Slater, Aurora, president; Dr. George E. Allen, Aurora, vice-president, and Dr. Henry J. Gahagan, Elgin, secretary and treasurer.

Southern Surgical and Gynecological Association.

Thirteenth Annual Meeting, held in Atlanta, Ga., Nov. 13-15, 1900.

President Dr. A. M. Cartledge, Louisville, in the chair.

Governor Candler of Georgia, delivered an eloquent address of welcome, which was responded to by President Cartledge.

MEDULLARY NARCOSIS.

Dr. W. L. Rodman, Philadelphia, read a paper in which he discussed the points of most practical value in connection with this method of anesthesia. No one will think of abandoning ether and chloroform. These trusted agents will continue to enjoy the full confidence of the profession, and the Corning-Bier method will be held in reserve for certain cases in which there is seemingly a clear contraindication to chloroform or ether. Medullary narcosis should be given subjects suffering from bronchial, pulmonary, and renal diseases; to patients affected with fatty or dilated heart, and cardiac diseases in general; to old people in whom the shock of general anesthesia is often great, and from its action in one case, the author believes it to be safer than chloroform or ether, in drunkards. The place where the spinal canal is entered is of some importance. Tuffier, Murphy, Matas, and others, who have had the largest experience with the method, prefer the fourth lumbar space. The author believes that any of the lumbar spaces can be punctured with safety. The fifth interspace, between the last lumbar and the first sacral vertebra, is in some respects the easiest route. Simple puncture of the spinal cord, if aseptically done, is unlikely to be followed by serious changes in the cord or its membranes. If to simple puncture is added the injection of some chemical substance by which anesthesia is produced, a new element of danger is undoubtedly incurred. Therefore, the choice of a local anesthetic becomes of paramount importance. Cocain is difficult to sterilize. Raised to 180 F., it is decomposed into ecgonin, and becomes comparatively inert. Some have found it practical to boil cocain, and then introduce it into the spinal canal without impairing its anesthetic properties. By raising it to a temperature of 180 F., and repeating this twice, thrice, even six times, as recommended by Tuffier, it should be sterile, and therefore safe, and yet a dose of thirty minims of a 2 per cent. solution of cocain is too large. The essayist recommended half of this amount. A small dose of a 2 per cent. solution is better than a larger one in greater dilution. In his first case he injected 18 minims, in the second, 15 minims, and in a third, 13 minims, and hopes still further to reduce the amount to 10 minims. We should aim to get complete anesthesia with the smallest amount of the drug.

The primary and secondary effects of the injection of cocain into the spinal canal are those of simple puncture exaggerated. Shock is increased; headache, restlessness, delirium, and other symptoms are necessarily more pronounced. He recommended an irido-platinum needle he used. His technique is similar in many respects to that outlined by Tuffier and others. He blindfolds the patient and fills the ears with cotton to avoid psychic pain.

Dr. Lewis S. McMurty, Louisville, predicted that medullary narcosis would not take the place of the established methods of anesthesia, and said its field of usefulness would be restricted to the class of cases outlined by the essayist.

Dr. Willis G. Macdonald, Albany, mentioned the case of a man, 42 years of age, who had suffered from hemorrhoids and fissure of the rectum. The patient had always been a hard drinker. Granular and hyaline casts were found in the urine, also a small amount of albumin. Patient likewise had a fatty, dilated heart. He injected 18 minims of a 2 per cent. solution of cocain in the subdural space, and when he was about to begin the operation the patient became cyanotic; a profuse, cold perspiration began, so that it became necessary to give 1/20 grain of strychnia; 1/25 grain of nitroglyceriin, when the respirations ran up to 60 or 80. No pulse was discernible at the wrist. The pupils were dilated; patient became unconscious. More than two hours elapsed before the speaker felt safe as to the condition of his patient. The man suffered severely from headache and projectile vomiting during the entire afternoon, and had two or three involuntary bowel movements.

During the summer, while on a visit to Europe, he saw a similar experience in the practice of Professor Kocher.

Dr. A. M. Cartledge, Louisville, said his experience was limited to eight cases in which he had used the new method, the results being satisfactory. In two patients severe headache followed its use, which soon disappeared. Analgesia was complete in all cases. In one case he removed the pus-tubes; in a second an enormous fibroid tumor of the uterus; and in a third a large intraligamentous cyst. Some of the patients came off the table in much better condition than if chloroform or ether had been employed.

Dr. E. P. Mallett, New York City, detailed a case of retroverted adherent uterus in the practice of Dr. Grandin, for which an abdominal section was made. At first, much difficulty was experienced in finding the subdural space or medullary canal, so that the patient complained of intense pain. It was finally found, cerebrospinal fluid escaped, and cocain was injected, the analgesia being apparently complete in eighteen minutes. So much pain was experienced while the operator was making the incision that it became necessary to administer a few whiffs of chloroform to complete the operation. He also detailed another case in which the needle was introduced more quickly and with better success; but slight vomiting, as well as other symptoms occurred. The subsequent course of both patients was uneventful.

Dr. Beverly Macmonagle, San Francisco, spoke of two cases which he saw, but they suffered a good deal from vomiting after the operation.

Dr. Seneca D. Powell, New York City, did not think the time is ripe for this method to be presented to the profession at large. The results should be worked out by experienced hands. He pointed out the dangers of cocain, referred to the susceptibility of some patients to the drug, and cited two cases that had occurred in his own practice in which he had used cocain, saying that both patients came very near dying from its effects.

Dr. J. W. Long, Salisbury, N. C., believed that the method was attended with danger except in the hands of experts.

Dr. Rodman, in closing the discussion, said he had used medullary narcosis on a man, 45 years of age, who had a bursa in the popliteal space, with marked kidney trouble. The result was satisfactory in every respect. The next case was one of advanced kidney trouble in which he did a suprapubic cystotomy. Result, satisfactory. He would use medullary narcosis in those cases in which there are positive contraindications to ether or chloroform. The surgeon should always obtain the consent of the patient before using the method, on account of any medicolegal complications that might subsequently arise.

(To be continued.)

Chicago Ophthalmological and Otological Society.

Regular Meeting Held Oct. 9, 1900.

Dr. C. D. Wescott in the chair.

PRIMARY MELANOTIC SPINDLE-CELLED SARCOMA OF THE RIGHT SIDE.

Dr. Casey Wood exhibited the patient and reported the case.

Mrs. C., aged 40, has not suffered from any serious illness, although her family history on the side of her mother, whom she closely resembles, is somewhat peculiar. The mother, two maternal aunts and one maternal uncle died of malignant disease—one of these (an aunt) from recurrent tumor of the eyeball. There is no history of any member of the father's family having been so affected. So far as her own experience is concerned, she never complained of any ocular affection except an asthenopic attack five years ago, probably due to prolonged

insomnia, from which she entirely recovered. Last February she noticed a feeling of fulness in the right eye, and about that time first perceived something growing on the iris. Shortly afterward she suffered from supraorbital neuralgic pains accompanied by lachrymation—all confined to the right side. These symptoms led her to a more careful examination of the eye and she observed two other, but smaller, spots on the colored part of the eye situated one above and one below the pupil. On June 2, 1900, she presented herself at Dr. Wood's clinic at the Post-Graduate Medical School owing to a return of the fulness in the right eye and because she noticed that the brownish deposit in the eye had considerably increased in size.

On examination the tension was found to be +1, while the vision was reduced to 2/7, somewhat improved on a hasty trial with lenses. The superficial scleral vessels were slightly enlarged. Toward the temporal side and directly outward on the anterior surface of the right iris was noticed a dark brown, smooth, irregularly triangular growth, apparently of about the same thickness as the iris, elevated above its plane and evidently growing from it. Its base was 3 mm. wide and was applied to the root of the iris, while its apex did not quite reach the margin of the pupil when that aperture was in a state of medium dilatation. It looked as if a piece of dark-brown velvet had been laid on the iris. With the oblique illumination the edges and some parts of the growth appeared to be translucent. Its borders were sharply defined, its surface seemed homogeneous and the neighboring iris tissue was not discolored or muddy. Two deposits, of apparently the same character as the largest tumor, were readily seen on the nasal half of the iris. They were of the size of pin-heads and were within, respectively, the upper and lower quadrants.

The pupil dilated irregularly with a mydriatic, hardly at all at the seat of the growth, although there are no posterior synechiæ to be observed and no indication of the tumor bulging behind the iris. The media and fundi, especially the ciliary retina and disc, appear normal. The eye is in all respects healthy, the iris especially being free of any abnormal pigmentation or elevated deposits. After keeping the patient under observation for a short time, a broad, peripheral iridectomy, including the whole of the temporal mass, was done. There was not more than the usual amount of hemorrhage and healing was normal. The excised iris tissue was preserved in 10 per cent. formalin and given for examination to Dr. Brown Pusey, who pronounced it to be a true sarcoma—mainly of the spindle-celled variety. Since June, the ciliary region about the iridectomy wound has been frequently examined by the ophthalmoscope and otherwise for further traces of the growth, but none has been found. The patient complains somewhat of photophobia in a bright light, and of blurring if she tries to do much near work. The remaining pigmented deposits would have been more rapidly seen if she had a light iris for a background, as probably her brown eyes prevented an earlier discovery of the disease. After the operation the tension became almost normal (it is still somewhat raised) and the scleral injection less. On Sept. 20, 1900, R. V.=1/10; L.V.=20/15. Ophthalmometer showed, left + or — 1, ax. 90°; right, + or —3, ax. 105°, with —2 cyl. ax. 15°, R.V.=20/20 nearly. The field for vision for white is sensibly contracted, probably due to secondary glaucoma. Since it is well established that the early and complete removal of an iritic melanosarcoma is sometimes followed by cure, Dr. Wood has ventured to keep this patient under observation, warning her that a more radical operation will be urgently needed if there is any return of the growth or any increase in the size of the other suspicious deposits in the iris. Dr. Wood thought that from the appearance of the remaining pigmented growths that there had been originally three simple melanomata, that the sarcoma had arisen from one of these and that there was a chance of the others remaining quiescent. The four months that have elapsed since the operation is too short a time to draw conclusions as to the probability of a return of the disease. He promised a supplementary report at a later date.

DR. F. C. HOTZ considers the elevated spots in the iris of a suspicious nature, although the time since the case has been under consideration is too short to make a positive statement. Early excision of the tumor invariably makes the prognosis a favorable one. He cited two cases of primary sarcoma which occurred in his own practice. One case has been under constant observation for two years, and the other for six years, neither one presenting any recurrence of the tumor. The eyesight has remained perfect. The tumors presented a reddish-gray appearance. The microscope revealed a slight tendency to melanosis. The first case, a woman 43 years old, presented a small flesh-colored, nodular tumor in the lower temporal portion of the iris of the left eye. It was flattened against the cornea, and reached up to the pupilary margin; the pupil was pear-shaped. Vision was 20/20. Tension was not increased, and no sign of any irritation of the eye. The tumor had been developing gradually since two years. In incising the cornea the entire tumor jumped up. It was connected with the iris by a narrow slender pedicle. The portion of the iris to which the tumor had been attached was also removed to prevent the possibility of a recurrence. Recovery was uneventful. The woman has reported from time to time for two years, and there has been no return. Microscopical examination showed the tumor to be a small round-celled sarcoma, with a tendency to become spindle-shaped, but not melanotic.

The second case, a man 32 years old, had a small flesh-colored tumor on the lower nasal portion of the left eye, reaching from the iris angle to the pupilary margin. Blood-vessels were plainly seen on its surface. Pupil was pear-shaped. On attempting to remove the tumor under cocain anesthesia a strong resistance was felt, creating the impression that extension into the ciliary processes had already occurred. The iris was excised with the tumor and the next day a small hemorrhagic deposit showed on the ciliary processes. This was gradually absorbed, but after a while a grayish mass began to form. The final course of the case disproved the belief that this mass might be a recurrent tumor. The patient was last seen in January, six years after operation, and up to that time there was no recurrence, the eye being perfectly well, with full vision. Dr. Hotz feels positive that the long interval since the removal of the tumors in these two cases warrants the statement that a definite cure was brought about by the timely operation and removal of the tumor.

DR. WILLIAM H. WILDER said that it is commonly believed by pathologists that the most malignant form of sarcoma is the small round-celled variety. On examining the specimen in Dr. Wood's case he found that in several places the cells exhibit a marked tendency to become spindle-shaped, so that it might be classified as a spindle-celled sarcoma. The tumor would therefore be of a less malignant character. The majority of sarcomata affecting the ciliary body and choroid examined by Dr. Wilder were of the spindle-celled variety.

DR. WOOD, in closing the discussion, agreed with Dr. Wilder as to the character of the cells in the specimens examined. This, of course, increases the chances of the patient's recovery. Personally, he feels that it is desirable to enucleate the eye where the ciliary body is involved, since cases are reported of the successful excision of the tumor. It would not be right to enucleate in the spindle-celled variety where the ciliary body is not involved, and patients certainly ought to be given every chance unless there be a decided involvement of the root of the iris or a recurrence of the tumor. Dr. Wood referred to the excellent and recent work on iris sarcoma done in this country by Veasey, and in Russia by Herschbaumer.

MELANOTIC SARCOMA OF THE ORBIT.

DR. HOTZ reported a case of melanotic sarcoma of the orbit of an unusually rapid growth and malignant type. The patient, 51 years old, who had never had any eye trouble and always enjoyed good sight, stated that last April he was taken with violent neuralgia of the right side of the face and his right eye became inflamed and protruding. After several weeks the pain and inflammation subsided, but the exophthalmus persisted and the sight gradually grew dimmer, though during the last two or three weeks he thought his sight had been better again and the eye-ball less prominent. The examination, July 3, showed a high degree of exophthalmus and marked restriction of the movements of the globe; no down-

ward rotation at all, the upward rotation very limited and the lateral movements but fair. Pupil was dilated, media clear, papilla and surrounding retina edematous and veins enlarged. Vision was 20/100. The retrotarsal fold of the lower lid was perceptibly crowded forward by a soft elastic apparently fluctuating mass which filled the entire space between the ball and floor of the orbit.

July 5, the following operation was performed: Free division of the external canthus and a transverse incision through the lower fornix down to the tumor, which presented a perfectly smooth surface under the tarso-orbital fascia. When this membrane was incised a dark-brown soft mass like old blood-clots was extruded and many more such clots were removed with a scoop until the examining finger found in the space behind the eye and between the recti muscles nothing more but the optic nerve. To examine the posterior aspect of the globe and the optic nerve the externus was detached, the eye forcibly rotated inward and the nerve drawn into view by means of a strabismus hook. The posterior aspect of the ball appeared perfectly normal, but a few millimeters from it there was a dark-gray patch in the nerve sheath. This discolored portion, about 4 mm. in length, was cut out, the externus reattached to the ball and a pressure bandage applied.

During the first week the ball seemed to recede into the orbit; but in the second week it was again forced forward; soon the lids could no longer be closed over it and the cornea became cloudy. The removal of the eye became an imperative necessity and was done July 20. As he found the whole orbit filled again with a soft melanotic mass which had permeated even the muscles, especially the inferior and externus, he removed the contents of the orbit, including the periosteum. The operation was concluded by cauterizing the nerve stump and tissue shreds around the optic foramen and packing the cavity with iodoform gauze. By August 4 the orbital walls were covered with healthy looking granulations and the patient left the hospital for his home. Three weeks later he returned with a new growth under the upper lid, a solid tumor immovably attached to, and evidently growing from, the supraorbital margin. Probably some infected shreds of periosteum had been overlooked in spite of the great pains taken to remove everything. In the orbit itself, however, no trace of recurrent melanosis was noticed. While in the hospital a tumor had also been discovered in the region of the left kidney and when the patient came back this tumor had increased at a great rate, and a small melanotic tumor was then also found under the large toe of the left foot. No further operation was deemed advisable under these circumstances, as the exitus lethalis seemed a question of a short time.

A remarkable feature of this case is the sudden protrusion of the eye in April, for orbital tumors by their gradual growth push the ball forward slowly and gradually. He thinks there has been a small tumor in the cellular tissue, too small to create any perceptible disturbance, and in April a hemorrhage occurred from this tumor, which caused the rapid protrusion of the eye, and at the same time tearing up the orbital tissues favored the rapid spread of the melanotic growth.

The section of the enucleated eye preserved in formalin jelly and a number of microscopic slides were exhibited. These had been prepared by Dr. E. V. Brown, who gave the following explanation: The microscopic examination shows the main mass to be a small, round-celled melanosarcoma of the soft tissues of the orbit. Here the pigmentation is most marked and the round cells are predominating. More recent involvement had taken place by extension to the adjacent sclera, optic nerve sheath and optic nerve proper, the proximal end of which is invaded to a greater extent than the end nearer the eye-ball. New blood-vessels are in process of formation in the orbital and scleral masses, but very little connective tissue is present.

Dr. J. E. Colburn cited a case of a large tumor of the orbit which had been diagnosed and treated as an abscess. The case was referred to him and an examination of the discharge showed the tumor to be a melanotic sarcoma. The orbital cavity was scooped out as far back as was possible. The frontal sinuses as well as the inner layer of the frontal bone were found to be involved. The patient died about a month afterward. Another case, in a young boy, presented a bulging tumor in the conjunctiva above the eye. Examination of the semi-fluid discharge revealed a melanotic sarcoma. Operation was not consented to by the parents. Four months afterward the tumor was of enormous size, involving the entire side of the head. There was some sloughing and a very offensive odor. Dr. Colburn felt that an operation might have lessened the suffering of the patient considerably, but in all probability it would have hastened death as in the previous case.

Dr. William H. Wilder considers the subject of recurrence and metastasis of sarcoma an extremely interesting one, especially when we are asking the question whether or not a positive cure has resulted. Some authorities speak of a cure after a period of three years has elapsed during which there has been no recurrence. This time-limit is, of course, a purely arbitrary one. The question which presents itself is that if recurrence takes place after this time we are to speak of it as a metastatic growth, or as an independent process. Some years ago in the laboratory of Professor Kundrath, in Vienna, Dr. Wilder saw a specimen of melanotic sarcoma of the liver in a subject who, thirty-two years before, had had one eye enucleated for sarcoma of the choroid. Post-mortem examination showed that the different organs were involved by the tumor. If this was metastasis, the period surely was a long one. Dr. Wilder said he had never heard of any longer period than that. This case emphasized the importance of being very chary in giving a favorable prognosis in this class of cases.

Dr William E. Gamble referred to a case which he exhibited before the Society in 1897. It was supposed to be a melanotic sarcoma of the ciliary body. He subsequently removed the eye, and up to the present there has been no recurrence of the growth in the neighboring tissues or elsewhere.

Dr. E. A. Lawbaugh saw a case in London of sarcoma of the liver. The patient died. Mr. Loffard remembered that he had removed the eye of that patient seventeen years ago. The eye was found in the museum, and on examination the tumor proved to be a melanotic sarcoma of the eye. This case is similar to the one reported by Dr. Wilder.

Dr. William A. Fisher dwelt on the importance of an early diagnosis in these cases, although in Dr. Hotz' case an earlier diagnosis would not have done any good. He cited the case of a boy, 10 years old, who had been having some trouble with his eye for two weeks. After giving him potassium iodid for three weeks the eye was enucleated and an encapsulated alveolar sarcoma was found at the bottom of the orbit.

THE USE OF PROTARGOL IN DISEASES OF THE EYE.

Dr. J. E. Colburn reported several cases of acute inflammation of the lachrymal sac following an attack of influenza, which he treated with protargol. In one case there was a large swelling of the right, and a smaller one of the left, lachrymal sac, both of about three days' standing. He dilated the punctum with a cone-shaped dilator, and then introduced a dental syringe into the sac. After a few minims of some thickened secretion had been withdrawn, he injected a sufficient amount of 5 per cent. solution of protargol to fill the sac. An ice compress was then applied, and on the second day the inflammation had entirely subsided. On the third day the sac could be washed out through a canal into the nose.

The second case had a small bean-like tumor in the region of the sac. It was treated in the same way as the previous case, the same results accruing.

The third case was that of a man who twice before had had lachrymal abscess, and once had to have the abscess lanced on the outside. The punctum was dilated, the sac washed out and then filled with a 5 per cent. protargol solution. Four days afterward the inflammation had entirely subsided, and the solution could be forced through the duct without any inconvenience.

Dr. Colburn offered for examination a small syringe devised by Dr. J. Austin. It consists of a metal tube connected with a glass cylinder, a check valve and a rubber bulb, which has a perforation on the side. This perforation is of great importance. The hollow needle can be introduced without holding the bulb compressed, and after introducing it into the

sac the bulb is compressed, the finger held over the little opening and the fluid, if not too thick, will be drawn into the chamber above. When using it as a syringe the tube can be filled with the solution without being obliged to pay any attention to the opening or solution. It is easily cleaned and does not get out of order. Dr. Dunn has applied the same principle to a medicine dropper, which is convenient, clean and easily handled. The quantity of fluid used can be regulated very easily. It is a perfect medicine dropper to use with solutions of atropin, eserin, etc., as it keeps them clean, because the solutions need not be drawn up into the bulb, and accurate dosage is possible. The valve in the glass cylinder prevents dripping from the tube held in any position.

DR. A. E. BULSON, JR., Fort Wayne, Ind., has had some experience with protargol, but has found weak solutions to be practically inert. Believing stronger solutions to be more valuable, he increased the strength until he reached 50 per cent. He then got results which he could not obtain with the weaker solution. He agrees with Dr. Colburn that protargol in lachrymal abscesses and in the treatment of all forms of dacryocystitis yields very gratifying results. He has his solutions prepared by the druggist, who adds a little glycerin to it. He recollected reading an article in which a 50 per cent. solution was advocated, the weaker solution proving ineffectual. This strength solution will not affect the cornea, even if there are abrasions. Nitrate of silver does not act in the same way.

DR. HOTZ' experience with protargol coincides with that of Dr. Bulson. He had no results with protargol until he adopted a 20 per cent. solution as his standard. In that strength it has proved to be a most valuable remedy in the treatment of pyogenic affections of the eye, especially inflammation of the lachrymal sac. The stronger solution does not cause any more irritation and pain that the weaker solution. He has found this to be one of the great advantages of protargol over nitrate of silver. In a case of blennorrheal conjunctivitis, the 5 per cent. solution was absolutely worthless; the 20 per cent. solution was remarkably effectual. Dr. Hotz has discarded the weaker solutions entirely, as his experience with them has been very unsatisfactory.

DR. C. P. PINCKARD inquired as to whether any of the members have had any experience with protargol staining the tissues. He is afraid to use it as he finds it to stain very rapidly, much more so than nitrate of silver.

DR. WILLIAM H. WILDER has used protargol extensively, and has found nothing to be so beneficial in certain conjunctive cases, especially in trachoma when the follicles are large and succulent. He uses a 25 per cent. solution in equal parts of glycerin and water, and months of treatment have never resulted in any staining.

DR. C. D. WESCOTT has seen at least two cases of argyrosis following the use of protargol in 10 per cent. solution. One of them developed much more rapidly than one would expect, even if a silver nitrate solution had been used. The susceptibility of the patient to protargol is certainly an important factor. Some patients complain bitterly of the pain and burning following the use of the same solutions used on others. He feels positive that there is a vast difference in the solutions of protargol as put up by different druggists; as to its effect in some cases, and as to the complaint that the individual patient will make in regard to the effect of different solutions during the treatment of the same case. Organic salts of silver are very liable to decompose, heat and light affecting solutions very rapidly. A great deal of care is necessary to have uniform solutions and uniform effects. In one of his cases staining of the conjunctiva occurred very rapidly from the use of a 10 per cent. solution every day for two weeks.

DR. W. F. COLEMAN has also noticed the discomfort caused some patients by the protargol. He uses a 25 per cent. solution, as a rule, although in some cases he has been obliged to reduce the strength to 5 per cent. in order to obviate the pain and burning. He has never seen any staining follow the use of protargol.

DR. J. E. COLBURN said that he uses a 10 to 20 per cent. solution, but always uses a fresh solution, because if they stand about for any length of time they become inert. He injected a 5 per cent. solution into the lachrymal sac for the reason that it would be retained for some time and there would be considerable pain following its use if a stronger solution were used. The pain in the one case he cited may have been due to the pain of the tumor, but it seemed to him that the degree of pain was greatly exaggerated by the use of the protargol. He has noticed only little staining resulting from its use, and that little has disappeared within two or three hours. He has also noticed that the same solution will produce different effects in the same eye on different days. On one day there may be considerable irritation, and on the next none at all. He always washes the conjunctival sac with sodium borate before using the protargol, and after the patient has been in the office for fifteen minutes, he again washes the conjunctival sac, in order to clean it of little shreds of mucus, which are so aggravating.

Cincinnati Academy of Medicine.

Regular Meeting Oct. 5, 1900.

President Dr. C. L. Bonifield, in the chair.

APPENDICITIS COMPLICATED WITH PREGNANCY; OPERATION.

DR. EDWIN RICKETTS reported the case of Mrs. B., aged 24, mother of four children, the last having been born in March, 1900. Her menstruation re-appeared in April, but there has been no flow since that time. In September she had a rather severe attack of pain referred to the lower abdominal region, the temperature reaching 104, and pulse 120. She was compelled to remain in bed for one week, after which the symptoms disappeared, not to return until November. On that date she suffered from symptoms indicating a partial obstruction of the bowels, temperature 102.5, pulse 110. Tenderness diffused over the entire abdomen, with periodical attacks of colicky pain. Diagnosis of appendicitis had been made by her attending physician. Examination of the uterus per vaginam showed it to be movable. Abdomen was opened in the median line as he did not know precisely what complications were to be dealt with. He found the bowel flexed and held back by the attached outer end of the appendix, which latter had to be stripped off, ligated and cut away. The bowels were enormously distended with gas so that a single puncture was necessary; after the escape of the gas the incision was stitched up with catgut. Bowels moved on the third day in response to compound licorice powder. The temperature was 98.8, pulse 90, when ninety hours after the operation a five-months fetus was delivered with but little discomfort to the patient. The specimen of the removed appendix was presented, and showed the walls of the same to be greatly thickened, but no pus was present.

STRANGULATED INGUINAL HERNIA.

DR. B. MERRILL RICKETTS reported a case of a male, aged 83, in whom the hernia had been strangulated for thirty-six hours. The chloroform was easily taken. On opening the sac he found a gangrenous condition of the gut and it was necessary to remove seven inches of the latter. Anastomosis was made by means of the Murphy button. The patient did well for nine days in spite of the extreme warm weather. At no time did his temperature rise above 100 degrees. On the ninth day he suddenly complained of severe pain in the precordial region and died in a few minutes. No necropsy could be obtained. No cause of death could be assigned, unless a heart clot. Dr. Ricketts stated that he was informed by Dr. Murphy, of Chicago, that the patient was the oldest in whom his button has been used.

OSTEOMYELITIS OF LOWER END OF FEMUR.

Dr. B. Merrill Ricketts reported a case of a boy 13 years of age, weight 195 pounds, who was injured very slightly on the left knee. Forty-eight hours later his temperature was 102.5 and he complained of severe pain and tenderness in the affected part. Within a few days the temperature ran to 104.5 and all the symptoms became greatly aggravated. On the thirty-third day operation of open incision was performed and about a quart of pus was removed from the thigh.

This was followed by the same amount of dark blood and clots apparently coming from the popliteal space. On finding extensive degeneration of the lower end of the femur, amputation was done at about the middle third. The lower fragment of the femur was spontaneously detached from the cartilage, ligaments and tendons about the knee-joint, so much so that there was absolutely no attachment. The patient's condition being so critical the removal of the medullary material was not done. For seventy-two hours his condition seemed hopeless but he has now recovered. It will in all probability be necessary to remove the medulla that recovery may be permanent.

GALL-STONES.

DR. B. MERRILL RICKETTS presented specimens from a woman, 58 years, who has complained of a pain and tenderness in the right side for the last six months. Tumor also appeared about six months ago in right hypochondriac region. As the diagnosis was uncertain, an exploratory operation was performed and the tumor was found to be the gall-bladder distended with stones, seven in number, aggregating 815 grains. The introduction of a needle into the tumor did not reveal the grating sound so often manifested in these cases. The stones were surrounded with a thick jelly-like substance, and were removed and the cavity carefully washed out. No urine was secreted from the 24th to the 36th hour, during which time 1/20 gr. nitrate of strychnia was given every two hours subcutaneously. Her condition seemed to be hopeless for four days after the operation, but she has gained so much in the last few days that recovery can be confidently expected.

REPAIR OF THE LEVATOR ANI MUSCLE.

DR. C. A. L. REED gave the anatomical relations of this muscle and called attention to the fact that not only does it, with its fellow on the opposite side, form the floor of the pelvic cavity, but also gives support to the various viscera passing through it. He had for a long time thought that the reason for non-success in the repair of a lacerated perineum was in many instances due to the fact that the anterior fibers of the levator ani, passing as they do downward along the sides of the vagina, were entirely neglected; he was convinced that these fibers were often ruptured in extensive lacerations of the perineum, so-called. His method was to make lateral incisions in the vagina over the muscle, find the divided ends and suture them together. So far in a small number of cases this procedure had met with complete success.

POST-MORTEM EXAMINATIONS.

DR. W. D. HAINES, the essayist, first called attention to the importance of autopsies, the difficulties of making them in private practice, and the generally slovenly manner in which they are performed under such circumstances. He called attention to the important preliminary observations to be made and laid especial stress on the position of the patient, of course referring to official cases. He carefully differentiated between post-mortem staining and ecchymosis, stating that the latter might be a most valuable medicolegal clew. In this relation he stated that the physical condition preceding death and the way in which death was produced greatly modifies the staining which follows. For instance, a man killed by lightning, one who succumbs to hemorrhage, and one dead of some long-continued exhaustive disease, will have little or no staining. On the contrary, those dying from acute diseases or accidents without great hemorrhage have the staining well marked. He then narrated one case in the practice of Dr. George W. Twitchell in which post-mortem staining took place before death. The skin covering the fingers, hands and forearms and that covering the toes, feet and ankles of the patient was livid for several hours before dissolution. Muscular rigidity was absent, the temperature subnormal. The patient, a robust girl, 14 years of age, had been seized suddenly thirty-six hours previously with a fatal malady. On post-mortem examination there was found appendicitis, gangrene of the bowel and perforation. The essayist further stated that probably the most troublesome class of cases that come to the attention of the examiner are those of sudden death, with few or no details as to the health or whereabouts of the deceased for some days previous to the finding of the body. Such instances are by no means infrequent in any large city, and it is almost always assumed that some crime has been committed or suicide has taken place. The duties of the examiner are numerous and often embarrassing to a degree. Where poisoning is suspected the appearance of the mucous membranes lining the mouth, esophagus and stomach are valuable, but often exceedingly misleading signs. For instance the congestion of an acute stomatitis or pharyngitis from simple cause may resemble exactly that due to poisons; the finding of some poisonous substance in sufficient quantity to produce death is the only reliable proof that the suspicion of poisoning has been confirmed. The essayist then discussed fully the causes of post-mortem rigidity and called attention to the curious attitudes assumed by the deceased in sudden and violent death. Coming down to the examination of the lungs, he said that the fact that these organs floated when thrown into a basin of water was by no means proof positive that the infant had been born alive, and quoted Taylor's "Medical Jurisprudence" very extensively in support of this statement. Attention was then called to the differentiation between the vesicles scattered over the anterior surface of the lungs in case where death had taken place several weeks previously, and the vesicles found in the same location in victims of asphyxiation, and the following case was reported. A mother attempted to kill her two children by chloroform inhalation, and to make everything sure she turned on the gas after carefully sealing the room. The younger child died and the following autopsy report was handed the coroner: "Autopsy twenty hours after death. Post-mortem staining extensive; rigor mortis absent; blood very dark, fluid, and did not coagulate. A great number of vesicles were found over the surfaces of the lungs. Microscopic examination revealed many of the alveoli ruptured." The opinion was given that the child died of asphyxiation by coal gas.

Do the lungs of persons dead of drowning contain water? The essayist made the following experiment to determine this point. A subject dead of uremia was placed in a vat and sufficiently weighted to prevent floating. Water was then added until the body was completely submerged. Twenty-four hours later the chest was opened and, after ligation of the trachea, the lungs were carefully removed and examined. On slitting the trachea and larger divisions of the bronchi, ten grams of a muco-aqueous fluid was obtained. A large number of examinations of the lungs of persons dead of drowning have been made since the above experiment, with special reference to this feature, and the conditions were similar to those found in the experiment, with the exeception that in some instances the lungs contained less fluid than did those the subject of the experiment. It follows from the above that the lungs of persons dead of drowning do not contain water. On the other hand, neither do the lungs of persons known to be dead before being placed in water permit the entrance of fluid. Therefore, one may not say whether the subject was alive or dead when placed in water.

Philadelphia County Medical Society.

Meeting held Oct. 10, 1900.

President Dr. J. H. Musser, in the chair.

SUCCESSFUL REMOVAL OF CATARACTS IN INSANE PATIENTS WITH RECOVERY OF MIND AND SIGHT.

DR. WM. CAMPBELL POSEY read this paper. He reported the case of a man aged 45, whose vision had gradually failed for three years. Soon after the mind also became affected, until finally he became subject to delusions of persecution and was committed to the insane asylum at Norristown. Examination showed cataract affecting each eye. One of them was removed by linear extraction and recovery from operation occurred within one week. Two weeks after the operation the man showed marked improvement of mental symptoms. Some time later the other cataract was removed. Glasses were given and at the end of one month vision was almost normal. At this time the mental functions had so much improved that he was allowed to return home, apparently free from the evidences of insanity, and now, at the end of two years, apparently is well.

The second case was that of a woman aged 60, who had also complained of gradual loss of sight, followed by delusional insanity. She also suffered from cataract affecting each eye. In this case the cataract was removed under cocain. After the operation almost normal vision was restored and with it the mental symptoms improved rapidly.

DR. CHARLES W. BURR, in discussion, stated that he had seen the first one after the operation had been performed and after the patient was apparently well. The explanation of recovery as given by the man was that he was a laboring man with a family and who, on finding that the vision was gradually failing, became despondent from loss of work and increased care, finally becoming insane. However, as soon as vision was restored he again found that he could once more do manual labor and support his family and the mind once more began to resume its normal functions. The speaker believed that in such cases of insanity the eye, like other organs, should be put in the best condition possible.

DR. COLLOCK stated that he had seen two similar cases benefited by operation.

DR. MORDECAI PRICE believed that every deviation from the normal lowered the cerebral functions, the correction of which would be followed by improvement of the symptoms. If the eye was at fault in cases of insanity the sight should be restored if possible and in most cases of insanity in which there is some special organ at fault he thought an early operation is indicated.

DR. GEORGE E. DESCHWEINITZ had operated probably twenty times on insane patients who also suffered from cataract. Some of these cases had been suffering with delusional insanity, senile dementia, alcoholic insanity and other forms of insanity. In one case of melancholia only, there was some improvement shown, such as cheerfulness, but in the others there was no improvement whatever. In his opinion operation for cataract on insane patients was generally followed by no improvement in the mental symptoms.

DR. POSEY, in closing the discussion, stated that in performing the operation on insane patients ether should be preferred. In these two cases presented, improvement of the mental symptoms followed after the operation. He had, however, operated in fifteen other cases without improvement being shown.

CLINICAL LAWS OF IMMUNITY OF DISEASE.

DR. LAMBERT OTT referred to the peculiar characteristics and manifestations of symptoms of such diseases as pneumonia, erysipelas and others which had a tendency to leave the patient more susceptible, while in others, such as scarlet fever, measles and the like, there was the opposite tendency. It had occurred to him that a patient suffering with one form of infectious disease in a measure was immune from some of the other infectious ones. For instance, sufferers of follicular tonsillitis seemed to be somewhat immune from diphtheria. In one family he had seen several members suffering from follicular tonsillitis, while another member of the same family had acute articular rheumatism. Immunity from the paternal side is not so readily transferred as from the maternal. This is well exemplified in the case of syphilis. The combined immunization conferred by different diseases combats infection from certain sources.

DR. JUDSON DALAND stated that the immunity transferred through the influences of heredity was an attractive one. The influences exerted by peculiar body characteristics seemed variable. As for instance, a plethoric person might suffer from a sthenic or asthenic attack of pneumonia. The high mortality in sthenic cases might in some cases depend on the amount of fibrin present, and the coagulability of the blood. As to the coexistence of two infectious diseases, he referred to cases of typhoid, combined with malarial fever. In such a case he had seen the influences of the malarial parasite first exerted, then subsiding while the symptoms of typhoid gained the ascendency, after which the malarial parasite again became active.

DR. W. M. L. COPLIN referred to the antagonism existing between one organism and another. Admixture of different kinds of bacteria results frequently in certain ones being destroyed. The consensus of opinion seems to be in the specificity of immunity.

DR. SOLOMON SOLIS-COHEN referred to the natural immunity which is evidenced by tracing the history of certain diseases. For instance, syphilis and other diseases are now less virulent than formerly. He desired to know the data on which one might determine the clinical laws governing this subject.

DR. OTT, in closing, stated that his data had been derived solely from clinical experience gained at the bedside of the patient.

HEART DISEASE OR EPILEPSY.

DR. F. SAVARY PEARCE read a paper with the above title. He referred to several cases in which the patients had suffered from attacks of syncope, and marked by such symptoms that it was hard to determine whether the attacks were brought on by cardiac involvement or whether they resulted from cerebral origin.

DR. ERNEST LAPLACE exhibited his new inhaler for ether and chloroform. The apparatus was designed several years ago, and consists of a tortoise-shaped device composed of two thin pieces of nickel-plated metal, with a cross-shaped aperture in the top, and so united by a hinge at one end that they can be opened for the introduction of layers of gauze on which the anesthetic is allowed to drop. The under surface conforms to the shape of the face. The inhaler can be used for ether or chloroform. Its principal advantage is that is can be readily sterilized.

DR. E. W. HOLMES could not see that the new instrument had any advantages over the Allis inhaler, since the latter permitted a more ready inflow of air during inspiration. The idea in giving ether was to administer air saturated with ether, which is obtained by the Allis inhaler.

DR. LAPLACE stated that he had employed the instrument for nearly two years with success. As to the inflow of air in giving an anesthetic, all that is necessary with this apparatus is to slightly elevate the cone. In giving chloroform less gauze should be placed in the apparatus than in the case of ether.

Meeting held Oct. 24, 1900.

Acting President Dr. F. M. Perkins, in the chair.

DR. ARTHUR DARE presented a new hemoglobinometer, with which he has made over a thousand estimations. Compared with other methods, he had found that the results conformed closely with that of the Oliver method, but differed considerably with the Gower instrument. The instrument consists of a series of graduated pieces of colored glass corresponding with certain percentages of hemoglobin and are read off rapidly, using a candle as the light to be projected through the glass.

DR. J. ALLISON SCOTT had used the instrument several times and believed that the results obtained were approximately correct.

DR. H. W. STELWAGON gave a brief account of a report of Professor Finsen's light institute at Copenhagen. The speaker first reviewed the history of the treatment of diseases by the use of light rays in this institution. At the present time twenty people were under treatment every hour, with from 100 to 200 on the waiting list. Of these some were cases of tuberculosis of the skin, alopecia areata, and erythematosis. The light principally used was either direct sunlight or arc light. The rays are focused on certain diseased areas through long lenses. In this way very small surfaces could be treated. The light is transmitted through a piece of glass disc placed in contact with the skin. The eyes of patients and attendants are protected by dark glasses. In addition to the treatment by light, local measures are also employed, such as the application of pyrogallol, the galvanocautery, etc. The results have so far been quite satisfactory. The treatment is carried on for about one hour daily and the course extends over a period of several months. As to relapses, one must express an opinion with a considerable amount of reserve. The criticism has been that other plans of treatment had been of equal value to that of light.

Dr. M. R. Hartzell believed that some of the good results had followed probably from the other local applications employed. Such applications as iodin and pyrogallol are of distinct value in many cutaneous affections. The great expense attending the establishment of a place where the work can be carried on militates against its employment. Under certain conditions he believed the light treatment was of value.

Dr. A. A. Eshner reported some anomalous cases of typhoid fever. In some of these cases the Widal reaction had been of decided value in making a diagnosis. In certain types the disease is really a septicemic process, probably depending on the mode of infection. In some instances the symptoms closely resemble miliary tuberculosis.

TYPHOID BACILLI IN THE URINE AND ITS DISINFECTION.

Dr. Norman B. Gwynn read a paper on this subject. Reviewing the history, it was found that Bouchard had, in 1881, claimed to have isolated typhoid bacilli from urine in 50 per cent. of the cases. Other writers had spoken of finding the micro-organism in 20 to 30 per cent. of the cases. As a rule, pure cultures are obtained. The urine may appear quite clear and is generally acid in reaction. In one instance he had found five million typhoid bacilli in ice of urine. He had experimented with various reagents to disinfect this urine, such as milk of lime, carbolic acid, bichlorid of mercury, chlorid of lime, formalin, and liquid chlorids. The results obtained with slaked lime, or milk of lime, had not been satisfactory. In a mixture of which two-fifths of the bulk had been milk of lime, living bacilli had been found. Carbolic acid was found to be of value when used in large amount. In a solution of 1 to 40, typhoid bacilli lived for days. Bichlorid of mercury was useful in a strength of from 1 to 40 up to 1 to 20, the latter disinfecting in about one hour. Formalin in a solution of one-tenth of 1 per cent. disinfects completely within half an hour. Chlorinated lime was found to be one of the best disinfectants, especially in those cases in which the urine is acid. To disinfect 1200 c.c. of urine requires 30 c.c. of chlorinated lime solution. Liquid chlorids have been found to be of considerable value, but must be used in large amount.

Dr. Howard S. Anders referred to the atypical cases of typhoid frequently met with. He had always insisted on careful disinfection of the urine in this disease.

Dr. J. P. Crozer Griffith referred to certain cases of typhoid in which no intestinal lesions had been found at necropsy. Typhoid fever in children is nearly always anomalous when compared with the disease in adults. As a rule, in children it only lasts from 14 to 17 days. Sometimes it may simulate meningitis.

Dr. Solomon Solis-Cohen spoke of the necessity of disinfection of urine in typhoid cases. He referred to a case that he had treated recently in which there had been cystitis, and in the urine pus and typhoid bacilli had been found.

Dr. David Riesman thought that since the Widal reaction had been generally used more anomalous cases of typhoid had been discovered than formerly. In these cases in which death had been due to a bacteremia, the pathologist might have overlooked the real disease. At the present time in such cases the typhoid bacillus may be isolated from the spleen.

Dr. A. G. Roussel had recently treated an anomalous case of typhoid in which there had been no intestinal lesions post-mortem.

New York Academy of Medicine—Section on Pediatrics.

Meeting held Oct. 11, 1900.

CONCLUSIONS FORMED AFTER SIX YEARS' EXPERIENCE WITH THE ANTITOXIN TREATMENT OF DIPHTHERIA.

Dr. Henry F. Koester opened the discussion with a paper having this title. It was founded on a large experience as one of the inspectors of the health department, and on 170 cases seen in private practice. He advised 2000 units as the minimum dose, and recommended giving 3000 units in severe cases, and repeating this dose in twelve or twenty-four hours. If the case were one of nasal diphtheria, he would give 4000 or 5000 units as the initial dose, and if there was laryngeal diphtheria present, a dose of 4500 to 6000 units. In the cases of mixed infection, or so-called septic cases the first dose should be as high as 5000 or 6000 units. The foregoing figures show that Dr. Koester has absolute confidence in diphtheria antitoxin as a curative remedy in diphtheria, and moreover that he believes it is perfectly harmless. For immunizing purposes he was accustomed to give 200 to 500 units, and as a result of his observations in 1800 cases of immunization he had learned to think very well of this method. In addition to using antitoxin he syringes out the throat with bore acid, or better still with a neutral solution of hydrogen peroxid, taking care to have the patient's mouth open during the syringing to guard against the entrance of fluid into the Eustachian tube. He strongly condemned calomel fumigations in laryngeal diphtheria on the ground that they were unnecessary where antitoxin is used, and by their irritating action predispose to pneumonia or bronchitis. The most common sequelæ of the antitoxin treatment of diphtheria were urticarial eruptions and joint pains. For the former, he advised sponging with cold water and vinegar; for the latter, rest and the internal administration of the salicylates. His conclusions were: 1. Antitoxin is a positive cure for diphtheria when used early and in sufficiently large doses. 2. Even when employed too late to secure its specific curative action, it can not do harm under any circumstances. 3. When administered before the invasion of diphtheria antitoxin possesses a positive immunizing power, which lasts about 30 days.

WHAT QUANTITY AND GRADE OF ANTITOXIN SHOULD BE GIVEN IN DIPHTHERIA AND HOW SHOULD IT BE ADMINISTERED?

Dr. William H. Park, of the Health Department, read this paper. He said that he had experimented at the Willard Parker Hospital during the last two months with small doses, giving to the cases in rotation as they were met with, 1000, 2000 and again 1000 units, without regard to the severity of the disease. During the time these experiments on small doses were being carried on the type of the disease was rather mild. Of the 93 cases, 42 received 1000 units. Of this series, 16 per cent. died. Of the 51 cases receiving 2,000 units, 13 per cent. died. Ten cases in the first series, and twelve in the second developed rashes. The local condition seemed to improve more slowly under the smaller doses. For severe cases of ordinary faucial and laryngeal diphtheria, he now advises beginning treatment with a dose of 3000 to 5000 units, and repeating it in 12 or 15 hours if no improvement has been observed. He does not think there is much prospect of our being able to eliminate the antitoxin rashes.

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

Dr. John H. McCollom, resident physician of the Boston City Hospital, presented a paper detailing his experience with very large doses of antitoxin. In one desperate case, that of a child admitted on the third day of the disease, a total of 60,000 units of antitoxin had been given in doses of 4000 each, yet the only troublesome symptom had been an urticaria. The patient had recovered. In another "septic" case, occurring in a girl of 4 years, and apparently doomed, recovery followed the use of 48,000 units of antitoxin. This amount had been reached before the characteristic effect of antitoxin had been observed. These cases were fairly illustrative of a large number which Dr. McCollom said had deeply impressed him because recovery had taken place, although from previous experience one would have been justified in assuming that they were hopeless, if not indeed, moribund at the time of their admission. He believes, therefore, it is the physician's imperative duty to resort to these enormous doses of antitoxin if smaller doses do not suffice or if the condition is especially desperate. He said that since September, 1895, 104 cases of clinical diphtheria had developed among the physicians and attendants at the Boston City Hospital. Antitoxin had been used in all of them, and every one had recovered. Paralysis had not occurred, and the duration had been below the average. Frequent urinary examinations had been made in 633 cases. In 42.3 per cent. there was no albumin; in 57 per cent. there was a minute trace. While the prognosis varies with the quantity of albumin in the urine, it is of no great significance. Of the 71

autopsies, not one showed a state of the kidneys such as could have had much to do with the fatal issue. Paralysis had not been observed more frequently among the cases receiving antitoxin than among those treated without it. The author's conclusions were as follows: 1. The ratio of mortality of diphtheria per 10,000 living was very high in Boston prior to 1895. 2. This ratio has been very materially reduced since the introduction of diphtheria antitoxin. 3.. The percentage of mortality in the South Department of the Boston City Hospital is lower than in any other of the hospitals used in his paper for purposes of comparison. 4. Since the larger doses of antitoxin have been used there has been a decided diminution in the mortality in apparently moribund cases. 5. There have been no injurious effects from the use of the serum. 6. To obtain the best results the diphtheria antitoxin must be given at the earliest possible moment.

DR. W. C. DEMING opened the general discussion, speaking from an experience in the Health Department represented by 277 cases of diphtheria and 479 cases of immunization. For ordinary cases he preferred an initial dose of 2000 units, and for severe or for laryngeal cases, a dose of 4000 units. For immunizing purposes he uses 200 units for infants, 300 to 400 in young children, and 500 units for adults.

DR. L. K. NEFF said that in "septic" cases or in laryngeal diphtheria he used about 7000 units for a child of 10 years, and gave half this quantity as a second dose within twenty-four hours, if no improvement had occurred. In ordinary tonsillar diphtheria, 3000 units would effect a cure.

DR. JOSEPH E. WINTERS commented on the very large number of cases of diphtheria developing in the Boston City Hospital. He said that on three different occasions he had observed a higher rate of mortality at the Willard Parker Hospital in those cases of diphtheria receiving the larger doses of antitoxin. This had been the experience last summer; the highest mortality had coincided with the use of the very large doses, and the lowest mortality with the period in which the small doses had been employed.

DR. H. W. BERG said that after careful observation of the cases at the Willard Parker Hospital he had become impressed with the fact that those that had received the very large doses of antitoxin had not done as well as those treated with the smaller doses. He had also noticed more albuminuria, the more frequent occurrence of erythemata and a larger proportion of these cases of broncho-pneumonia during the period when the large dosage had prevailed. In his private practice he never used more than 1000 units at a single dose, though he often repeated this two or three times. He was opposed to the very large doses simply because of the large quantity of heterogeneous serum that must be introduced at one time.

DR. CHARLES HERMANN said that it was generally stated that an immunizing dose of antitoxin confers immunity for 30 days, yet it had been demonstrated recently that this period is not over 21 days. Where measles and diphtheria are associated, the immunity lasts only two weeks, and the immunizing dose should be 500 instead of 300 units. It is well to remember that the antitoxin eruption may at times very closely simulate the eruption of scarlatina.

Philadelphia Pediatric Society.

Meeting, Oct. 9, 1900.

Dr. Alfred Stengel in the chair.

DR. W. O. XANDER presented two cases of infectious nephritis secondary to mumps before the Society and gave their histories briefly as follows: The boys were cousins, nearly the same age, and both lived practically under the same circumstances. Neither of the cases had suffered from scarlet fever, typhoid, nor diphtheria. The speaker did not see the first case until recovery had practically occurred, but the history had been that there had been enlargement of the glands of the neck. There was general edema, pallor of the skin and glandular enlargement. The urine contained blood, casts and albumin (one-third by volume). In the other case there were distinct evidences of nephritis. Neither gave a history of desquamation of the skin.

DR. A. A. ESHNER did not concur entirely as to the nomenclature employed. Calling these cases nephritis of infectious origin resulting from mumps might be open to some doubt, since such a condition is very rare and the infectious nature which was supposed to have caused the nephritis occurred some time before. The fact that nephritis arose did not necessarily imply that the cause was due entirely to some infection. Parainfections seemed a better name to use.

DR. W. M. WELCH believed that nephritis following mumps was very rare. He had seen certain cases of scarlet fever in whom there had been but very slight cutaneous involvement, but with glandular enlargement, and it was possible that the cases might be of this nature.

DR. ALFRED STENGEL had seen these cases some time after the attack. In his opinion the diagnosis of mumps was somewhat doubtful, since the glandular enlargement had been quite low in the neck. He did not believe these cases had suffered from scarlet fever. It seemed probable that they had had the type of acute glandular enlargement described by Pfeiffer and others as a glandular fever.

DR. XANDER, in closing, stated that he did not think these cases had scarlet fever, since there had not been any desquamation, even between the fingers, where it was prone to occur. There had been no epidemic of scarlet fever in the neighborhood.

DR. T. S. WESTCOTT read a paper entitled "A Method for Differential Modification of the Proteids of Milk in Percentage Mixtures." The method for determining these proportions he had arrived at by mathematical calculations. For the most part the calculations were based on the formula of milk as determined by Koenig.

DRS. HAMILL and MACLACHLIN presented a case of supposed congenital syphilis with rapidly destructive lesions. The history was that the child appeared to be normal at birth, but a few days later a deep ulcer developed on the upper lip, which continued to spread until at the end of the twentieth day the upper margin extended almost as high as the outer canthus. Above this diseased area there was a large surface covered with a bright reddish eruption in which there were abundant papules. The child also had nevi affecting the trunk and face. The speaker could determine no manifestations of syphilis on the part of the mother. She had given a history of having had two miscarriages.

DR. JAY F. SCHAMBERG could not altogether agree as to the diagnosis of syphilis. Congenital syphilis was usually accompanied by secondary symptoms and signs, such as blebs and bullæ, sniffles and the like. He was rather of the opinion that it was due to a trophic disturbance such as occurs in herpes, leprosy, etc.

DR. J. H. MCKEE and others had seen this case on the twelfth day after birth, and it was the consensus of opinion that it was not syphilis.

DR. D. L. EDSALL coincided with the view of Dr. Schamberg. He believed that the condition was due to vascular disturbance. He had seen a case in which there had been a swelling of both cheeks in an infant about a year old. Both cheeks had within a day assumed a purplish or bluish hue, were cold, and painful on pressure. Subsequently some sloughing occurred and gave rise to a diagnosis of cancrum oris affecting both sides of the face. Within a period of only a few days the condition disappeared and recovery took place. The opinion expressed was that the latter case was due to thrombosis.

DR. F. A. PACKARD, on behalf of the milk commission, appointed by the Society to determine the quality of the milk sold in the market of Philadelphia, stated that since this commission was probably the first one appointed for such a purpose by any society, the work was hard to outline and for that reason time would be required to develop the methods. This commission had, however, gone to work and had endeavored to learn the methods of improving the quality of the milk in different cities. The commission which he represented had obtained legal advice as to the necessary powers to be given and other matters. They had sent out notices to dairymen of the work of the commission, asking if such producers desired their product examined. Of three examined, two came up to

the required standard. The work of the commission will be continued.

Dr. M. Ostheimer (by invitation) reported a case of fatal intestinal hemorrhage of unknown cause in an infant of 5 months.

Dr. J. M. Jopson reported a case of stricture of larynx following intubation, occurring in a boy 5½ years of age. In this case the tube had been left in the larynx 45 days, and the stricture doubtless resulted from cicatricial contraction due to pressure of the tube.

Therapeutics.

Lumbago.

R.	Sodii salicylatis ..... gr. x		66
	Potassii iodidi ..... gr. v		33
	Ext. sarsaparillæ fluidi ..... ℥ii	8	
	Aquæ destil., q. s. ad ..... ℥ss	16	

M. Sig. At one dose, to be taken in water after each meal.
—Nestor Tirard.

Trigeminal Neuralgia.

R.	Extracti cannabis indicæ..... gr. vi		36
	Acidi salicylici ..... ℥i	4	

M. Ft. cachets x. Sig. One wafer three times a day.
—*N. Y. Med. Jour.*

Rheumatism.

R.	Methyl salicylatis ..... ℥ii	8	
	Mucilaginis ..... ℥iiss	80	
	Rum		
	Syrupi, āā ..... ℥viss	26	

M. Sig. This quantity to be taken in twenty-four hours in divided doses.

This can be used when sod. salicylate is not tolerated.
—Cosma: *N. Y. Med.*

Habitual Constipation.

R.	Sulphuris loti		
	Potassii bitartratis, āā..... ℥i	32	
	Pulv. sennæ (leaves)..... ℥iv	16	
	Syrupi rhei ..... ℥ii	8	
	Syrupi rhamni purshianæ, q. s..... ℥iii	96	

M. Sig. One teaspoonful morning and evening.

Cirrhosis of the Liver.

R.	Sodii phosphatis ..... ℥viii	256	

Sig. Tablespoonful in hot water before meals, for jaundice and gastric disturbances.

R.	Potassii acetatis ..... ℥ii	64	
	Infusi digitalis ..... ℥viii	256	

M. Sig. One tablespoonful in a glass of hot water after eating, to reduce the ascites by increasing renal elimination.

R.	Potassii iodidi		
	Aq. bullientis, āā ..... ℥i	32	

M. Sig. Five drops in milk three times a day, gradually increased in syphilitic enlargement of the liver.
—*Dominion Med. Monthly.*

Care of the Skin in Acne.

R.	Hydrarg. chloridi corros.....gr. viiss		5
	Tinct. benzoini .....gr. lxxv	5	
	Emuls. amygdalæ amaræ, q. s. ad....℥viii	256	

M. Sig. Apply night and morning, first bathing the skin with very hot water, to which a few drops of creolin have been added. —E. Lacour: *N. Y. Med. Jour.*

First Stage of Pneumonia.

R.	Tinct. veratri viridis ..... m. xxiv		1 5
	Vini antimonii ..... ℥i	4	
	Ammonii bromidi ..... ℥iiss	10	
	Liq. ammonii acetatis ..... ℥iiss	80	
	Syrupi limonis, q. s. ad ..... ℥iii	96	

M. Sig. One teaspoonful every hour in water until easier, then every two hours.

Blair Stewart states that his object in prescribing the above combination is to reduce the heart's action, equalize the circulation, lower blood-pressure, allay the irritative cough, stop the pain and promote diuresis and diaphoresis.

La Grippe.

R.	Acetanilidi ..... ℥i	4	
	Alcoholis, q. s. ft. sol.		
	Tinct. gelsemii ..... ℥ss	2	
	Syr. zingiberis, q. s. ad ..... ℥ii	64	

M. Sig. One teaspoonful every three hours.
—*Med. Summary.*

Emulsion of Castor-Oil.

R.	Olei ricini ..... ℥i	32	
	Pulv. acaciæ ..... ℥ss	16	
	Elix. saccharin ..... m. xx	1	33
	Ol. amygdal. dulcis		
	Ol. cari, āā ..... m. ii		12
	Aquæ destil. q. s. ad ..... ℥ii	64	

M. Dissolve the gum in water, add the oil gradually and then the flavor. Sig. One to two tablespoonfuls at bedtime according to age. —*Med. Times and Hosp. Gaz.*

Sluggish Eczema.

R.	Tinct. saponis viridis		
	Picis liquidæ		
	Alcoholis, āā ..... ℥iii	12	

M. Sig. Apply locally twice daily. —Stelwagon.

Eczema of the Eyelids.

R.	Resorcini ..... gr. iii		2
	Unguenti aquæ rosæ —cold cream....℥iiss	10	

M. Sig. Apply three or four times daily, avoiding the application of water to the lids.

Scrofulous Ophthalmia.

R.	Hydrarg. oxidi rubri ..... ℥iiss	10	
	Zinci oxidi ..... ℥i	4	
	Adipis ..... ℥iii	96	
	Ceræ albæ ..... ℥ss	16	
	Camphoris—dissolve in ol. olivæ..... ℥i	4	
	Glycerini ..... ℥i	32	

M. Sig. Apply two or three times daily on the edges of the lids and corners of the eye, and

R.	Quininæ sulphatis ..... ℥iss	6	
	Liq. potassæ arsenitis ..... m. x		66
	Ext. hyoscyami ..... gr. iii		2

M. Ft. pil. No. lx. Sig. One after each meal.
—C. Fronefield.

Chronic Conjunctivitis in Children.

R.	Acidi borici ..... gr. xl	2	66
	Sodii chloridi ..... gr. x		66
	Zinci chloridi ..... gr. ii		12
	Aquæ destil ..... ℥iv	128	

M. Sig. Instil a few drops in each eye three times a day.

W. L. Pyle, in *Internat. Med. Magazine*, recommends the above in treatment of chronic conjunctivitis following blepharitis.

Rachitis.

R.	Ol. terebinthinæ ..... ℥v	20	
	Alcoholis—camphorated ..... ℥iss	48	
	Spiritus lavendulæ ..... ℥ii	8	
	Eau de cologne ..... ℥v	20	

M. Sig. Apply by friction with hair gloves steeped in this liniment.

Also systematic exercise, consisting of active and passive gymnastic movements, should be practiced to stimulate general nutrition. —*Province Med.; N. Y. Med. Jour.*

Seborrhea Preceding Baldness.

R.	Formalin ..... ℥i	4	
	Glycerini ..... ℥ii	8	
	Eau de cologne		
	Alcoholis, āā ..... ℥iii	96	

M. Sig. Apply locally to the scalp with friction.
—Ravogli: *St. Louis Courier of Med.*

Otorrhea.

R.	Liq. plumbi subacetatis ..... m. xx	1	33
	Acidi acetici dil. ..... m. vi		36
	Vini opii ..... m. xx	1	33
	Aquæ destil., q. s. ad ..... ℥i	32	

M. Sig. Drop ten drops into the ear three or four times a day, previously warmed. —*N. Y. Med. Jour.*

Sclerosis of Locomotor Ataxia.

R.	Hydrarg. chloridi corros .....gr. 1/40		0015
	Auri et sodii chloridi.....gr. 1/30		002
	Zinci phosphidi .....gr. 1/20		003
	Strychninæ sulphatis .....gr. 1/60		001

M. Ft. pil. No. i. Sig. One such pill every three or four hours. —Thompson: *Jour. Med. Sciences.*

Ointment for Scabies.

R.	Unguenti sulphuris		
	Unguenti zinci oxidi, āā .....℥i	32	
	Styracis..... .....℥iii	12	
	Saponis viridis .....℥iiiss	14	

M. F. Unguentum. Sig. Cleanse the parts well and apply. two or three times daily.

To Cleanse the Naso-Pharyngeal Passages.

R.	Sod. bicarb		
	Sod. boratis		
	Sod. chloridi, āā .....℥i	32	

M. Sig. One teaspoonful in a cupful of warm water as a gargle and insufflation.

Loss of Appetite in Children.

Dr. Prüssian has used orexin tannate with unusual good results in anorexia of children, either simple in character or as a symptom of tuberculosis and chloranemia.

R.	Tablets orexin tannatis—chocolate coated āā .....gr. iv		25

Sig. One tablet one hour before meals three times a day. —*Merck's Archives.*

Delayed Resolution in Pneumonia.

R.	Potassii iodidi 3i	4	
	Ammonii chloridi .....℥iss	6	
	Mist. glycyrrhizæ comp. .....℥vi	192	

M. Sig. One tablespoonful four times a day.

Baldness.

R.	Pilocarpinæ hydrochloratis .....gr. v		3
	Otto rosæ .....m. viii		5
	Ol. rosamarini		
	Lin. cantharidis, āā.....℥iv	16	
	Glycerini puri .....℥i	32	
	Ol. amygdalæ dulcis .....℥ii	64	
	Spts. camphoræ .....℥iii	96	

M. Sig. Rub well into the scalp night and morning. —Whitla: *Ther. Rev.*

J. H. Hobert Egbert, in *Merck's Archives*, states that the antipyretic action of quinin may be augmented by combining it with other remedies: 1, which relax the peripheral capillaries, as powdered ipecac and opium; 2, remedies which are antipyretic through action on nerve centers and vasomotor system, as acetanilid, antipyrin, etc., which may be given preferably in liquid form:

R.	Quininæ sulphatis		
	Acetanilidi, āā .....℥i	4	
	Arom. elixiris .....℥i	32	
	Syrupi—chocolate—q. s ad .....℥iv	128	

M. Sig. One to two teaspoonfuls every four hours.

He also states that the action of quinin is augmented by combining it with other cinchona alkaloids:

R.	Quininæ sulphatis		
	Cinchonæ sulphatis		
	Cinchonidinæ salicylatis, āā gr. xxx.....		2

M. Ft. capsulæ No. xxx. Sig. One to three capsules every four hours.

Gonorrheal Urethritis.

R.	Protargol		
	Iodoformi, āā .....gr. xii		75
	Balsami peruviani .....m. vi		36
	Ext. belladonnæ .....gr. i		06
	Cacao butter, q. s.		

M. Ft. crayons No. xii, each two inches in length and one-eighth inch in diameter. Sig. One crayon to be introduced into the urethra twice daily. —H. B. Sheffield: *N. Y. Med. Jour.*

Antiseptic Dusting Powder.

R.	Salol .....℥iv	16	
	Zinci sulphatis .....℥vi	24	
	Pulv. benzoini .....℥ii	8	
	Pulv. talci .....℥viii	32	
	Olei fœniculi .....m. vii		5

M. Thoroughly triturate until a fine powder is made and use freely.

Of use in treatment of chronic ulcers, suppurating sores as an iodoform substitute.

Infusion of Normal Salt Solution.

IN PNEUMONIA.

Dr. Pelligrene uses:

R.	Sodii chloridi .....gr. xl	2	66
	Sodii bicarb .....gr. xx	1	33
	Aquæ destil., q. s. ad.....℥viii	256	

M. Sig. Use subcutaneously.

Dr. Galvanzi, of Modena, has had success with the following:

R.	Sodii chloridi .....gr. xii		75
	Sodii bicarb .....gr. viiss		5
	Aquæ destil., q. s.....℥viss	208	

M. Sig. To be used subcutaneously.

IN DIABETIC COMA.

Dr. Lepine uses:

R.	Sodii chloridi 3i	4	
	Sodii bicarb. .....℥iiss	10	
	Aquæ destil .....Oii	1024	

M. Sig. For subcutaneous use.

The conclusions as to the mode of action to relieve suffering from shock and effects of hemorrhage:

1. Hypodermoclysis at a temperature of 110 F. is a direct tonic to the sympathetic nerve-centers.

2. It is a tonic to the muscles of the blood-vessels.

3. It is a tonic to the heart, by distending its chambers with increased bulk of fluid.

4. It washes out the tissues and dissolves the toxins, urea and other excrementitious products and passes through the kidneys rapidly.

5. A short time after a normal salt solution is injected into a vein a chill may occur, followed by perspiration and labored respiration. With subcutaneous injections these symptoms do not occur.

—John R. Maynes: *South Cal. Pract.*

The Treatment of Leprosy with Oil of Chaulmugra.

At a recent meeting of the Charité Society of Berlin, Dönitz (*Berliner klin. Wochenschrift*, 1900, No. 36, p. 733) reports successful results from the treatment of two cases of leprosy with subcutaneous injections of chaulmugra-oil. The drug has long been administered internally for this purpose, but it is not always well borne. It was found that the subcutaneous injection was followed by both local and general reaction, the former consisting in redness of the affected areas and the latter in distinct elevation of temperature continuing for several days. Pericyclitic redness of both eyes, persisting for some time, was especially noteworthy. The injection was repeated only when the ocular irritation had subsided. There was soon no doubt that the infiltrations were disappearing. Their turgescence diminished; the skin became finely wrinkled and again mobile; and the color improved. In the course of four months, extensive infiltrates disappeared, leaving only a bluish discoloration. The face, from having presented a typical leonine appearance, acquired its normal expression. In this case sulphur-baths also were employed, and it is thought these may have exerted a salutary effect; but the other patient received only injections of oil. In the latter instance also the results were eminently satisfactory. In both vision was improved through a clearing up of the cloudy cornea. The dose selected was that just small enough to excite reaction, and it was not repeated until the effects of the previous injection had subsided. For this purpose 0.1 or 0.2 grams were required at intervals of from ten to fourteen days. It is suggested that possibly the same method of treatment may be successful with regard to other cutaneous affections, as for instance those of syphilis.

Medicolegal.

Expert May Give Opinion on Facts He Relates.—While it is true that an expert can not be asked to give his opinion based merely on the testimony heard by him, whenever there is a conflict in such testimony, yet, when the material facts are within such expert's own knowledge, and related by him in his own testimony, he may, the Supreme Court of Utah holds, in Wells vs. Davis, give an opinion based wholly on such personal examination and knowledge, without having such facts hypothetically stated.

Professional Secrecy in the French Courts.—The plaintiff, in a recent case decided in France, insured in May the life of a man who died in November. The insurance company claimed that it had been fraudulently induced to insure an incurable, and proved this fact by the testimony of the physician of the deceased. The testimony, however, was thrown out by the supreme court as inadmissible on account of its having been obtained by violation of professional secrecy. The company was therefore compelled to pay the insurance.

Still Liable for Medical Attendance for Wife.—In Ott vs. Hentall, brought to recover from a husband for medical attendance, nursing and board, furnished his wife, at her request, she pledging his credit, after he had so treated her as to seriously injure her health, in consequence of which she had left him, the Supreme Court of New Hampshire holds that the statutes of the state enabling married women to hold to their own use property acquired by them, and enlarging their rights and liabilities, do not affect the wife's authority to pledge his credit, in such a case as this, for necessaries.

Conclusive Determinations as to Sick Benefits.—In Myers vs. Jenkins, the Supreme Court of Ohio holds that when a member of such an order as that of the Independent Order of Odd Fellows claims to be entitled to sick benefits, he must seek his remedy, in the first instance, in the lodge and the tribunals of the order. And the determination of the matter by such lodge and tribunals, in substantial accordance with the laws of the order, it declares, will be final and conclusive of the right to receive such benefits. If the lodge refuses or neglects upon proper demand to have the right to such benefits determined in substantial accordance with the laws of the order, or refuses to pay such benefits after the same have been awarded to such member, then, it says, such member may sue in the civil court for the recovery of such benefits.

Contract With Physician Not Binding on New Board.—The Supreme Court of New York holds, at a trial term in Ulster county, in the case of Connelly vs. the Commissioners of the Alms House of the City of Kingston, that a contract made with a physician to render surgical and medical services to the city poor for a term of years, as for instance for two years, by a board constituting a department of the city government, is not binding upon a succeeding board, formed in consequence of the term of office of one-third of the members of the board expiring each year. It says that the good of the public service would seem to demand that, apart from legislative provision, incoming boards should not be bound, against their will, by contracts made by outgoing boards extending far into or through the term of the new board. And it holds that one who deals with the officers or agents of a corporation is bound to know their powers, and the extent of their authority. Besides which, it suggests that, the duration of the position of physician to render medical and surgical services to the city poor not being prescribed by law, treating the position as an office, or an employment under contract merely, it would seem to be one that could be terminated by the employing board at pleasure, in that state, although it does not find it necessary to here pass upon that point.

Manager Not Authorized to Employ Physician.—In the case of the Pittsburg Coal and Coke Company vs. Shaley, it appears that an employee, at a place in Indiana, of a corporation having its principal office in Chicago, was injured, while in the line of duty, so that he suffered extreme torture and severe pain, and required immediate relief in the way of medical attention. The manager of the company's office and yards at that place, who was at the time the highest officer there, employed, on its behalf, a physician to render to such employee such medical aid and attention as he required and his injuries demanded. But a statement of these facts, the Appellate Court of Indiana holds, was not sufficient to withstand a demurrer where it was sought to hold the company for services so rendered, there being no allegation that the employment of a physician for injured employees came within the scope of the duties of the manager mentioned. The court declares that it can not hold as a matter of law that such employment would come within the scope of the duties of the manager of the coal company. It has often been held, it says, that the manager of a railroad has authority to employ physicians and to bind his company for their services, and the same power has been given subordinate officers of railroads in cases of emergency. But the reasons for such a rule as is applied to railway companies, the court holds, do not obtain in such a case as this.

Board of Health Orders Must be Reasonable.—An order was issued, in the name of the Mississippi State Board of Health, which provided, "On account of yellow fever at several places along the coast in this state, and several cases of yellow fever at Edwards, and reported suspected cases at various other points through this state, until further ordered by this board no person will be allowed to get off trains and boats at any point or station in the state of Mississippi," etc. Now, this order, the Supreme Court of Mississippi holds, in the case of Wilson vs. the Alabama Great Southern Railroad Company, must be held void by unreasonableness. All orders of the board of health, it declares, must stand the test of reasonableness, and their reasonableness is for the court to determine. Regard, it goes on to say, must, of course, be had to the maxim, "Salus populi suprema lex," or "the welfare of the people is the supreme law," but regard must be also had to the liberty of the citizen, and both principles must be given reciprocal play. The public health must be vigilantly cared for, but with due caution that no order intended to secure it shall be so sweeping and arbitrary as to interfere unreasonably with the citizen's rights, say, of return to his home, neither he nor it having been exposed to infection. For example, the plaintiff in this case was from Meridian, Miss., a noninfected point, and had a duly-issued health certificate, and was returning from Nashville, Tenn., a noninfected point, to his home, in Meridian, on a valid excursion return ticket. He had not been exposed to infection. Yet he was put off the train in compliance with the above-quoted order. The order, as will be observed, and the court points out, was not that no person who had been exposed to infection, or who came from an infected point, or who was destined for an infected point, should be allowed to come into the state, but that no person whosoever, from any point whatsoever, should be allowed to get off anywhere in the state. The authorities, it insists, are uniform that this sort of order is wholly indefensible, so it pronounces this order void for unreasonableness, and holds that it was error to grant a peremptory instruction for the defendant railroad company, in this action for damages against it. A railroad company, it holds, must take the risk—as all citizens do—as to the validity of such orders, when it yields to the order alone. But when its defense is, not that it yielded obedience because of the order only, but because, also, of vis major, or irresistible force—a shotgun quarantine, for example—its defense, the court adds, will be maintained, if it shall appear that such vis major, such uncontrollable necessity, was the real cause of action. It need not go to the extent of actual collision with force marshaled by necessity; but it must show that its action was due to such force, existing and capable of controlling its action.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, Nov. 10.

1 Endothelioma of Bone, with Many Metastases. (To be concluded.) Franz H. Brandt.

2 Report of a Case of Facial Neuritis, Associated with Unilateral Retro-Orbital Neuritis. Wm. M. Leszynsky.
3 *Ruptured Urethra, with Report of Cases. Nathan Jacobson.
4 A Case of Congenital Ocular Defect (?) E. E. Blaauw.
5 *What the Law Requires of the Surgeon. Dudley S. Reynolds.
6 A Case of Mastoid Abscess; Recovery without Operation. Joseph D. Harrigan.
7 *An Unusual Case of Meralgia Paresthetica, with Intermittent Lameness (Claudication Intermittente—Type Charcot). Alfred Gordon.

Medical News (N. Y.), Nov. 10.

8 *Some Observations on Anesthesia by Intraspinal Injections of Cocain. S. Ormond Goldan.
9 *Further Experience with Subarachnoidean Injections of Cocain for Analgesia in All Operations Below the Diaphragm. John B. Murphy.
10 The Examination of Stomach-Contents. W. A. Bastedo.
11 The Hydriatic Treatment of Tuberculosis. J. H. Kellogg.
12 *Bronchial Disease Not Invariably a Contraindication for Ether Anesthesia in Abdominal Surgery. Thaddeus A. Reamy.
13 Clinical Memorandum. Persistent Slow Pulse. James J. Walsh.

Philadelphia Medical Journal, Nov. 10.

14 Aneurysm of the Heart with Thrombosis of the Left Coronary Artery. Judson Daland.
15 *The Treatment of Syphilis—A New and Tolerable Form of Administering Mercury, with Report of 65 Cases treated at Bellevue Hospital. Winfield Ayres.
16 Value of Potassium Bicarbonate in Colds and Influenza. Stephen Harnsberger.
17 *Localization of a Bullet-Wound of the Spinal Cord; Removal of the Bullet from the Spinal Canal. Howell T. Pershing.
18 Study of a Mummy Affected with Anterior Poliomyelitis. John K. Mitchell.
19 Analgesia in Obstetrics Produced by Medullary Injections of Cocain. (Concluded.) S. Marx.

Medical Record (N. Y.), Nov. 10.

20 *Some Clinical Aspects of Gout. Beverley Robinson.
21 *The Relief of Prostatic Enlargement. Joseph B. Bissell.
22 *The Constant Quantity in the Various Climatic Treatments of Tuberculosis. C. G. Campbell.
23 *Chronic Copper Poisoning Among Artisans. Henry A. Kurth.

Cincinnati Lancet-Clinic, Nov. 10.

24 Union District Medical Association. Garrett Pigman.
25 Prevention of Insanity. Brooks F. Beebe.
26 Gall-Stones. W. H. Hawley.
27 Bleeding. E. E. Armstrong.

Boston Medical and Surgical Journal, Nov. 8.

28 *A New Test Meal. A. E. Austin.
29 Spinal Caries with Abscess: Analysis of Cases. Ernest B. Young.
30 Celluloid as Material for Flat-foot Supports. Albert H. Freiberg.
31 *The Agglutination by the Patient's Serum of the Bacteria found in Cystitis and Pyelitis, with a Consideration of the Pleomorphism of the Bacteria Found in These Infections, Especially as Regards Chromogenic Properties of the Staphylococci. Thomas R. Brown.
32 The Management of Abdominal Testicular Ectopia Associated with Inguinal Hernia. Charles A. Powers.

St. Louis Medical Review, Nov. 10.

33 *President's Address Before Mississippi Valley Medical Association. Harold N. Moyer.
34 Impetigo Contagiosa Bullosa: Its Relation to Pemphigus Neonatorum with the Bacteriology of Eight Cases. Martin F. Engman.

American Practitioner and News (Louisville, Ky.), Oct. 15.

35 Early Experience with Brown Sequard's Elixir and Recent Experience with the Roberts-Hawley Lymph. Frank C. Wilson.
36 A Brief Report of Some Interesting Surgical Cases. William H. Wathen.

Medicine (Detroit, Mich.), November.

37 Examination of the Stomach Contents with Respect to Digestive Ferments and Digestive Products. Frederick A. McGrew.
38 Multiple Ossified Ecchondrosis and Exostosis of the Trachea and Larger Bronchi. I. B. Diamond.
39 *The Blood in Neurasthenia: A Study of Thirty-three Cases, Based on a Differential Leucocyte Count. Theodore H. Romeiser and Joseph Collins.

Dominion Medical Monthly (Toronto), October.

40 President's Address, Executive Health Officer of Ontario. T. V. Hutchinson.

American Journal of the Medical Sciences (Phila.), November.

41 *A Report of Cases of Pernicious Anemia, with Special Reference to the Blood-Findings. Frank Billings.
42 *A Report of Two Cases of Filariasis. Howard A. Lothrop and Joseph H. Pratt.
43 *Recurrent Vomiting in Children. (Cyclic Vomiting.) J. P. Crozer-Griffith.
44 Aneurism of the Arch of the Aorta, with Rupture into the Superior Vena Cava. Alfred Stengel.
45 Subpectoral Abscess. John H. Musser.
46 *Biologic Studies with Reference to Pathology. Theo. Klingmann.
47 *The Role of the Alloxuric Bases in the Production of the Cardio-Vascular Changes of Nephritis. Alfred C. Croftan.

Medical Herald (St. Joseph, Mo.), October.

48 *The Curability of Inebriety by Medical Treatment. T. D. Crothers.
49 Some Experiences with Goat's Lymph. T. L. Putman.
50 Contusion of the Brain. J. Cameron Anderson.
51 The Marcy-Bassini Operation for Hernia. C. H. Wallace.
52 Stab Wounds of the Liver—Enormous Hemorrhage—Hypodermoclysis—Recovery. Daniel Morton.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), November.

53 A Cystoscopic Prostatic Incisor for Bottini Operation. F. Bierhoff and A. Freudenberg.
54 *Leucopathia Unguium. M. L. Heidingsfeld.
55 *Monilethrix. E. Wood Ruggles.
56 An Unusual Case of Non-Malignant Papilloma. G. S. Whiteside.

Annals of Surgery (Philadelphia), November.

57 *A Skiagraphic Study of the Normal Membral Epiphyses at the Thirteenth Year. Eugene R. Corson.
58 *A Contribution to the Study of Intra-Abdominal Omental Torsion. Joseph Wiener, Jr.
59 *Retrenchment of Lipomatous Abdominal Wall Combined with Operation for Radical Cure of Umbilical Hernia. James B. Bullitt.
60 Report of a Case of Actinomycosis Hominis. John C. Oliver.
61 Traumatic Rupture of the Small Intestine; Abdominal Section; Recovery. John J. Buchanan.
62 *A Study of One Thousand Operations for Acute Intestinal Obstruction and Gangrenous Hernia. (Concluded.) Charles L. Gibson.

Medical Summary (Philadelphia), November.

64 Why Do Remedies Act? W. F. Ball.
65 Syphilis. Drs. Pennebaker and Tripp.
66 A Physician's Life. George J. Monroe.
67 Some Thoughts on Therapeutics. William H. Russell.
68 Impotency and Sterility. J. J. Caldwell.
69 Mitral Insufficiency with Loss of Compensation—Treatment. C. E. Tucker.
70 A Few Hints and Suggestions. M. G. Price.

Journal of Experimental Medicine (N. Y.), October 25.

71 *Amyloid Substance and Amylaceous Bodies in Multiple Syphilitic Tumors of the Bones, with Remarks on the Relation of Amylaceous Bodies to Amyloid Substance. W. Ophuls.
72 On the Presence of New Elastic Fibers in Tumors. Alice Hamilton.
73 A Case of General Gaseous Emphysema with Gas Cysts in the Brain Formed After Death and Due to Bacillus Mucosus Capsulatus, with a Consideration of the Gas-Producing Properties of Certain Members of This Group in the Cadavers of Animals. W. T. Howard, Jr.
74 *Two Cases of Necrotic Bronchopneumonia with Streptothrix. Charles Norris and John H. Larkin.
75 Acute Internal Hydrocephalus. A Clinical and Pathologic Study. Charles W. Burr and D. J. McCarthy.
76 A Preliminary Report of an Acid-resisting Bacilli, with Special Reference to Their Occurrence in the Lower Animals. D. Murray Cowie.

Bulletin of the American Academy of Medicine (Easton, Pa.), October.

77 The Essential Condition for Habitation to Develop and Maintain Healthful Family Existence. Rosa Engelmann.
78 On the Influence of Early Training of Manly and Womanly Qualities, to Avoid Degeneracy. J. Cheston Morris.
79 Medical Supervision of Growing Children. John M. Taylor.
80 The Home and the School. E. Stuver.
81 School Hygiene and Medical Inspection of Schools. W. M. D'A. Carhart.
82 Defectives and Delinquents Inside and Outside the Family Circle. James W. Walk.
83 Is the Habitual Use of Alcoholic Intoxicants in the Home Consistent with Its Thorough Sanitation. J. W. Grosvenor.
84 The Hygiene of Vision in the Home. S. D. Risley.
85 The Physician's Influence in re Vacation Schools. H. C. Putnam.
86 How One College Endeavors to Teach Social Health Problems. Charles McIntire.

Journal of the Boston Society of Medical Sciences, Oct. 16.

87 *The Antitoxin Unit in Diphtheria. Theobald Smith.
88 *Artificially Produced Mitotic Division in Unfertilized Arbacia Eggs. Albert P. Matthews.
89 *The Toxic Effects of Formaldehyde and Formalin. Martin H. Fischer.

Toledo Medical and Surgical Reporter, November.

90 Sewage Disposal in Cities. W. C. Chapman.
91 Cosmetic Surgery. O. T. Sears.
92 Treatment of Eczema in Children. Louis Miller.
93 Report of a Case of Tenia Solium. Belle C. Slocum.
94 The Continuous Current in Endometritis. Harry L. Hall.
95 The Treatment of Acute Articular Rheumatism. James O. Carroll.

Cleveland Journal of Medicine, November.

96 *Pyloric Stenosis Without Dilatation of the Stomach. N. Stone Scott.
97 A Case of Acute Catarrhal Laryngitis in a Child Four Weeks Old, Accompanied by Severe and Prolonged Spasms of the Larynx. John J. Thomas.
98 *Some Practical Points in the Management of Labor. F. S. Clark.
99 *A Case of Fibroid Tumor Complicating Labor. John J. Thomas.
100 Knot of the Umbilical Cord. W. Wallace Holliday.
101 Left Tubo-Ovarian Abscess and Right Pyosalpinx. Wm. H. Humiston.
102 The Influence of Sex Upon the Production of Nervous Diseases. William C. Krauss.
103 *Popliteal Aneurysm Cured by Digital Pressure of the Femoral Artery. C. A. Hamann.

Maryland Medical Journal (Baltimore), November.

104 *The White Death, and the Sanatorium or School for Consumptives. Edward M. Schaeffer.
105 *An Inquiry into the Rôle of the Domestic Animals in the Causation of Typhoid Fever. Wm. Royal Stokes.
106 A Case of Intravesical Dilatation or Ballooning of the Ureter. Hugh H. Young.

International Journal of Surgery (N. Y.), November.

107 Cancer of the Uterus and Its Treatment. Stansbury Sutton.
108 Some General Statistics of the Urethra Treated by Electrolysis. Robert Newman.
109 *The Diagnosis of Ectopic Pregnancy Before Rupture, Based on Eleven Cases. J. F. Baldwin.
110 The Technique of Surgical Gynecology. (Continued.) Augustin H. Goelet.
111 Regional Minor Surgery. (Continued.) George G. Van Schaick.
112 Excision of External Carotid for Inoperable Epithelioma of the Floor of the Mouth—Osteomyelitis of the Tibia. Joseph A. Blake.

Clinical Review (Chicago), November.

113 Lipoma, Vesical Calculus, Antrum Disease, Hemorrhoids. Nicholas Senn.
114 *The Vectis. John Bartlett.
115 *The Management of the Defective Classes. L. L. Skelton.

Memphis Medical Monthly, November.

116 A Résumé of Some Surgical Work. M. Goltman.
117 Syphilis of the Larynx. Richmond McKinney.
118 The Financial Problem in Medicine. W. T. Watson.
119 Report of a Case of Tobacco Amblyopia. Geo. S. McReynolds.
120 A Case of Continued High Temperature Resisting Antipyretics. R. S. Stanley.

Canadian Journal of Medicine and Surgery (Toronto), Nov.

121 Recent Pathologic Studies of the Blood. L. H. Warner.
122 *Physical Training—Its Range of Usefulness in Therapeutics. B. E. McKenzie.
123 The Physician's Vaster Empire. John Hunter.
124 Intussusception in Children with Illustrative Cases. A. Primrose.

New Orleans Medical and Surgical Journal, November.

125 Alcohol as an Etiologic Factor in Diseases of the Nervous System. E. M. Dupaquier.
126 Report of a Case of Acute Phosphorus Poisoning with Demonstration of Postmortem Findings. J. B. Guthrie.
127 A Note on the Medical Relief Work Done in Galveston After the Storm. Isadore Dyer.
128 A Case of Double Intraligamentous Cyst, with Remarks. C. Jeff Miller.

St. Louis Courier of Medicine, October.

129 *On the Abuse of Certain Stimulants and Cardiac Remedies. G. Baumgarten.
130 *The Diagnosis of Ectopic Pregnancy Before Rupture, Based on Eleven Cases. J. F. Baldwin.
131 Maggots in the Ear. M. A. Goldstein.
132 Report of a Sporadic Case of Cerebrospinal Meningitis. James S. Cleland.
133 Report of a Case of Cesarean Section. Chas. H. Dixon.

Columbus Medical Journal, October.

134 Hay Fever. Ola S. Hendrixon.
135 *The Diagnosis of Ectopic Pregnancy Before Rupture, Based on Eleven Cases. J. F. Baldwin.
136 Abortion. N. E. Aronstam and J. F. Rosenberg.
137 The Recent Epidemic of Smallpox in Columbus. H. M. Platter.

New England Medical Monthly, (Danbury, Conn.), November.

138 The Rights of Children. F. W. Searle.
139 Asthma and the Uric Acid Diathesis. S. S. Garst.
140 Case of Ulcerative Colitis. T. J. Biggs.
141 The Value of Glyco-Thymoline (Kress) in the Local Treatment of Diseased Mucous Membrane. George A. Hewitt.
142 The Feeble-Minded: Care of Them, and Returns for Amount Expended. Martin W. Barr.
143 Secondary Anemia: Its Treatment. J. W. P. Smithwick.

AMERICAN.

3. **Ruptured Urethra.**—Four cases of this accident are reported by Jacobson, who has selected them from a number treated in hospitals and private practice. They show, in his opinion, that only a slight degree of force is necessary, not only to lacerate but to completely sever the urethra, that the necessity for early diagnosis is apparent and immediate relief imperative. If urinary leakage and constant infection of the soft parts is not prevented, gangrene and danger to life from sepsis may be expected. The author does not consider repeated catheterization wise or the wearing of a permanent catheter advisable. On the other hand, satisfactory drainage of the bladder and soft parts is readily accomplished by perineal incision. He believes that the perineal catheter, after having been worn forty-eight hours, can, on removal, be replaced in the dark, so readily and thoroughly do the tissues cement. It should be removed once a day for thorough cleansing and this, with daily irrigation of the bladder, keeps the parts in good condition. Granulation tissues spring up on all sides and the mucous membrane grows in from the severed ends of the urethra until the tube is relined. The shaping of the canal is accomplished by the daily passage of a full-sized curved sound into the bladder or, if this is very painful, the sound can be inserted on alternate days for two weeks. Its use should be begun on the third or not later than the fourth day, and if systematically carried out, using a sound of 32 to 36 French, no danger of stricture is to be feared. He calls special attention to the recognition of the proximal end of the severed urethra by palpation and feels sure that careful search will often locate this end and permit the ready introduction of the catheter into the bladder.

5.—See abstract in THE JOURNAL of October 20, p. 1051.

7. **Meralgia Paresthetica.**—This condition, first noticed within the last five years, has been since frequently observed, but the majority of cases are atypical. The operative treatment of the external cutaneous nerve by resection is the method for its relief. Gordon reports a case which varied from the usual type in the involvement of other branches of the cutaneous nerve and in producing the intermittent lameness described by Charcot and Goldflam. The whole of the external cutaneous nerve, with both its branches, and also the cutaneous branches of the crural nerve, were involved. The patient declined surgical intervention and therefore remains uncured.

8.—See abstract in THE JOURNAL of November 10, p. 1232.

9. **Subarachnoidean Injections of Cocain.**—Murphy's article is similar to, though not identical with, the one recently noticed in THE JOURNAL of October 20, ¶76, p. 1056, and the illustrations are similar. He reports, however, a number of additional cases and believes that the range of usefulness of the method is increasing as confidence and security are assured by the results. He ranges it, however, after nearly all other anesthetics as regards safety, and recognizes for it after all only a limited utility so far as present experience warrants.

12. **Bronchial Disease and Ether.**—Reamy maintains that the existence of bronchitis is by no means a contraindication to the use of ether and, in fact, he uses ether in all cases excepting those of strongly-marked disease of the kidneys or respiratory organs. He insists on the purity of the ether used and the use of a modified Trendelenberg position in case of weak heart or bronchial trouble, and on care in the method of administration. He prefers the closed inhaler in cases of bronchitis, reports cases in which he has used it, and remarks that his records show that he has also employed it in the acute stage of bronchial disease with the result of arresting the cough and destroying the congestion present. In conclusion he reiterates the statement that his clinical studies justify him in the belief that in properly selected cases ether inhala-

tion is positively curative of bronchitis. Its action in these cases is largely local. To avoid unpleasant complications and to secure the desired results, the following points are essential: 1, proper preparation of the patient; 2, preparation of the operating-room with a temperature of 98 to 100 F.; 3, pure ether; 4, a proper inhaler; 5, proper methods of administration; 6, due caution against exposure in removing the patient from the operating-room to her own room. The temperature of her room should not be below 80 degrees for several hours after the operation; 7, proper care of the patient during convalescence. She should be permitted to drink large quantities of water and should keep the bowels freely open.

15. **Treatment of Syphilis.**—Ayres reports his experience in the treatment with mercurol, a remedy which he thinks is of great value. It caused gastric irritation in but one case, and he thinks it better in this respect than any other preparation of mercury used internally. It controls skin eruptions better than other preparations, while the mucous eruptions are affected by it as well as any other. It offers the further advantage that it can be taken in pill form.

17.—See abstract in THE JOURNAL of September 1, p. 579.

20. **Gout.**—Robinson's paper is a somewhat critical one on the prevailing views on gout. He is sceptical as to dietetic treatment, maintaining that no absolute theory of gouty treatment based on mere diet will answer many of the requirements of the condition and that functional disturbances of various forms may arise seemingly without cause. There is little doubt, he thinks, that many gouty manifestations which appear to be functional are really inflammatory in their nature, and credits some disorders of the prostate, uterus and ovaries, more rarely the intestines, and also appendicitis, to this taint. He says there are forms of peritonitis not connected with appendicitis and that there is much operative interference for the local conditions when the disease is one of general systemic taint and, of course, is untouched. The general tone of his article is to emphasize the value of long experience, utilizing all the data, as against scientific and especially operative enthusiasm with less experience.

21. **Prostatic Enlargement.**—Bissell recapitulates his article by stating that dissections of the pathological prostate show that hypertrophy is almost never confined to the middle lobe alone, but that the whole of the prostate is involved. This involvement is glandular and fibroid in character. The older the case, the greater the predominance of the fibroid element. At times there is a venous congestion and a stasis also of the capillaries, which adds a vascular element to the size of the prostate and its adjacent tissues. Any operation which does not attack the hypertrophy of the lateral lobes is not radical and can not effect a permanent cure. The removal or destruction of the middle lobe, in the great majority of cases, only partially if at all removes the cause of the obstruction, although the multiple cauterizations may so relieve the capillary stasis and edema of this portion as to give a very decided temporary relief: and if most of the obstruction in any special case is due to this condition the relief may be marked and last for considerable time, provided the bladder and kidneys have little or no secondary disease, and provided sepsis does not follow. From the above he assumes that prostatectomy with drainage is an operation, under modern aseptic conditions, as little dangerous as an interval-operation for appendicitis in properly selected cases where general tissue-degeneration of the body has not progressed to a hopeless extent, the bladder and kidneys are not too seriously damaged and septic infection, if it exist, is not too profound. Even with a part of these conditions existing, complete removal of the prostate with free drainage is rational and scientific treatment, and offers the best hope of relief and the best chance of a permanent cure with the least danger to life.

22. **Climatic Treatment of Tuberculosis.**—The various climates for tuberculosis are discussed by Campbell, who enumerates the following conditions as destroying to germ life: High percentage and volume of sunlight; temperature of sun sufficiently high to promote sterilization; dryness of atmosphere; porousness of soil; constant freezing temperature; infrequency of habitation, and untavorable conditions for the formation of dust. The first three of these conditions are actually germicidal and positive in their action, the last four simply unfavorable for the formation of germ-life. He thinks each case should be treated individually and speaks of the lower regions of Arizona and their advantages for tuberculous patients.

23. **Chronic Copper Poisoning.**—The accidents to which artisans in copper are especially liable are noticed by Kurth, who finds the true characteristic symptoms to be the dyspepsia, which is the earliest to appear, anemia, which is also early and comes before emaciation, loss of strength or painful facial expression, and lastly, nervous irritability. If, together with these facts, the patient works in copper or brass, the diagnosis is not difficult. The facial expression is drawn and anxious, like that of marked phthisis. The complexion is darker than that usually seen in anemia. The term "sallow" comes close to describing it. Nervousness is very pronounced. The prognosis is uniformly good when organic changes have not occurred. The treatment is prophylactic above all. If the patient can not give up his occupation, a vacation for two or four weeks will sometimes be of the greatest benefit. He suggests intermittent occupation in this particular line of work, similar to that prescribed by law in Germany as regard lead-workers in potteries. The chief reliance, however, must be on prophylaxis and change of occupation.

28. **A New Test-Meal.**—A new test-meal suggested by Austin consists in 2 grams of dried egg-albumin compressed into tablets to be taken with two glasses of water and the contents withdrawn one hour later. He considers that this better meets the conditions, as it is free from the objections of indefiniteness of the amount of the food elements employed and the clogging of the tube in the removal of the usual test-meals. He compares this with Ewald's test-meal commonly employed and discusses the different features observed in patients subjected to his experiments. He considers that the unreliability of the presence of lactic acid as a diagnostic symptom is well brought out in these experiments, and maintains that the tablets fill all the necessary conditions of the usual test-meal for testing the stomach secretions.

31. **Agglutination of the Bacteria in Cystitis and Pyelitis.**—Brown has experimented with the bacteria found in four cases of cystitis, in one of which the kidney was also involved. In two of the three cases in which a complete test was made there was an absolute positive agglutination reaction and a suggestive reaction in the third, with the patient's serum. This suggests that it may be frequently found to occur in cases of cystitis and pyelitis and may be a means of differentiating the bacteria where there is doubt. One notable point made was the pleomorphism of many micro-organisms, the bacillus coli in particular. He finds that by cultures and transplantations on the different media the chromogenic properties of the staphylococci are notably changed; starting for instance with a growth almost white in color after six successive transplantations, colonies were obtained of the typical color of the staphylococcus pyogenes aureus. He offers the suggestion that many which we now consider separate species originated from a common source and that the variations in cultural peculiarities and chromogenic tendencies may have been directly dependent on the favorable and other factors surrounding the organisms.

33.—See abstract in THE JOURNAL of October 20, p. 1046.

39. **Blood in Neurasthenia.**—Romeiser and Collins find that while the hematology of neurasthenia is by no means invariable and while some cases have apparently normal blood, the following conditions are usually present: A relative increase of the large and small lymphocytes with a corresponding decrease of neutrophiles, a relative increase of eosinophiles and degenerate leucocytes, a leucopenia often, oligochromemia, microcytes, and variation in size of the erythrocytes, which often show nucleoids or are associated with an increase of platelets. In general these conditions correspond with what we might

expect. The variations in individual cases also correspond with the clinical types of the disease.

41. **Pernicious Anemia.**—Billings reports nineteen cases with special reference to the blood-count. The symptoms noticed are: general weakness, gastric disturbance, nervous symptoms, yellow tint, cardiovascular disorders, elevated temperature, hemorrhage, etc. The hemoglobin varied from 15 to 74 per cent.; the red corpuscles from 156,000 to 1,000,000; the color-index in 53 of the 65 observations was below normal. The specific gravity bore more constant relation to the number of red corpuscles than the hemoglobin. During rapid improvement, it was noticed there was a tendency of the hemoglobin to lag behind the other solids of the blood. The leucocytes in the average where below normal generally corresponded to the degree of anemia. The average percentage of mononuclear cells were about normal. The eosinophiles tended to increase with improvement and to diminish with failing health, though their behavior was too fickle to formulate a rule. The myelocytes were most abundant, generally speaking, when the patient was low, but they were of little diagnostic or prognostic import. These cases seem to show that the nucleated red cells are an essential feature of the disease. They are present in every case though they may disappear when the patient makes a decided gain in health. The actual number was sometimes very large, but more often it was small, averaging 71 cubic millimeters. In individual cases, a comparison of these cells taken from time to time was of value, but a small number was not necessarily a favorable sign. The quality seems to be of greater significance than the number. The regenerative forms of normoblasts are of little consequence, but the degenerative forms of megaloblasts are very characteristic. Their proportion varied with the severity and stage of the disease, usually gaining as the disease advanced. The irregularity of the megaloblasts is more often extensive in the process of degeneration and absorption and this peculiarity was noticed in almost every one of the series. It is rare if at all seen in secondary anemias. Poikilocytosis was present at some time in all cases, but was not a constant factor during the course of the disease and especially during the stage of improvement.

42. **Filariasis.**—Lothrop and Pratt describe two cases in which filaria were found in the blood, both coming from Barbadians and members of the same family. They discuss the general pathology and treatment of the condition at some length.

43. **Cyclic Vomiting.**—Four cases of this condition are described by Crozer-Griffith, who notices the paucity of the literature in regard to it. Vomiting may be the first and most striking symptom. From the offset it is obstinate and oft-repeated. It may cease temporarily and then re-commence. Generally it continues very frequent until the close of the attack and then gradually or suddenly ceases. Constipation is a very constant but not necessary symptom. The abdomen was retracted and flat in two cases. Abdominal pain is almost entirely absent. Thirst is intense, appetite lost. The tongue is not usually very greatly coated; the breath is bad. There is no rule in regard to the temperature which may be febrile, subfebrile or normal. Respiration is decidedly affected and may be irregular and rapid. The urine is affected, but no conclusion can be drawn in regard to it. Ascites was present in two cases at least. The nervous symptoms are interesting. Convulsions occurred in one case reported by Snow. Exhaustion is extreme; emaciation is marked, but consciousness is not usually lost. The duration of the attack is variable, and recovery rapid. The longest duration of any of Crozer-Griffith's cases was ten days, the shortest, possibly a week. Even with extreme exhaustion and excessive vomiting, recovery is rapid. The symptoms suggest that it may be a gastric neurosis but he is not satisfied as to the nature. He thinks it may be of toxic origin in some connected with fatty metabolism. The diagnosis is easy in well-marked attacks. Obstruction of the bowels may be suspected or meningitis may cause confusion, but they are distinctly characteristic to this disease. Nephritis is to be excluded by a study of the urine. The prognosis is generally good, though not necessarily so. Two of the cases reported have died. Treatment is generally unsatisfactory. Alterations in diet should be tried. If prodromal symptoms threaten, a purgative may possibly do good by removing the poisonous matter. Care should be taken to keep up a constant action of the kidneys. If the attack has actually commenced, he opens the bowels with a saline injection, but after this it is not well to give anything by the mouth. Calomel or bismuth may be given in enemata and morphin has done good in some cases. Stimulants by the rectum, and strychnin and digitalis by the skin are to be used as needed. Hypodermoclysis seems to offer some help in severe cases. Ice or counter-irritants to the epigastrium may be tried. If a lull in the vomiting occurs, as disease advances, it may be well to give Rochelle salts or phosphate of soda, but there is nothing to be gained by merely emptying the bowels, as if the constipation were the cause of the disease.

46. **Biologic Studies with Reference to Pathology.**—This will be noticed editorially.

47. **Alloxuric Bases in Nephritis.**—Croftan reports experiments to determine the cause of cardiovascular changes in the forms of nephritis in which retention of the excrementi tious substances precedes a lesion of the heart and arteries, and this he finds in xanthin and hypoxanthin as representative members of the group of alloxuric bases. He concludes that these play an important rôle in the production of cardiac changes observed in all forms of nephritis with the exception of the chronic indurative form sometimes seen as a result of senile arteriosclerosis.

48. The abstract in THE JOURNAL of October 20, p. 1051.

54. **Leucopathia Unguium.**—The whitening of the nails often seen in small patches and which has been a matter of superstition, etc., for generations is noticed by Heidingsfeld. He mentions the three divisions made by Unua, viz., leuconychia punctata, where the predominating lesions are in the form of spots; leuconychia striata, where they are in the form of bands or striæ; and leuconychia totalis where they involve the nail in its entirety, and criticizes the classification. Leuconychia striata is not so uncommon a condition as has been supposed. He has seen seven well-marked cases in fourteen months, while slight degrees of the condition have been observed in almost twice as many. Several cases are illustrated and he finds that in all well-marked ones the cuticle knife has been used to trim and keep back the nail fold. There are no doubt other agencies than traumatism which cause leuconychia. It is a well-established fact that it has been noticed in anemia, multiple neuritis, typhoid, measles and other febrile diseases associated with general malnutrition. The striate and punctate forms indicate an intermittent cause, while the total form indicates a constant factor or one with but slight intermittence so that normal nail substance has not been produced. The almost universal statement that the pathologic change in leuconychia is due to infiltration of air is opposed by the author on the basis of microscopic examinations. He finishes his paper by saying that leuconychia is the result of some pathologic change of structure of a plane of nail-cells, approximating a failure of the affected cells to undergo normal, physiologic keratinization. The cause may be trauma, malnutrition, febrile diseases, neuroses, or any agency which disturbs the growth, development or keratinization of matrix cells in their change to nail structure. Infiltration of air is absent and there is no rational physiologic basis for such a theory.

55. **Monilethrix.**—This disorder is a disease of the hair characterized by a nodose or beaded condition and resulting in baldness of the involved area of the scalp or other parts of the body. It is a very rare affection and the case here reported by Ruggles is said to be the fourth one observed in this country. This case and one observed by Gilchrist are the only ones on record where other parts than the scalp were involved. The contracted portion of the hair is the seat of the disease, and fracture usually occurs there without much fringing out of the ends. The microscope shows the cuticle to be intact throughout save that in a very few hairs transverse cracks or splitting at the ends is found. The etiology is very obscure; no bacterial cause has been discovered and the most plausible

theory is that the disease is an intermittent trophoneurosis as yet unexplained. The origin is intrafollicular since the hair emerges from the follicle with the nodes already formed. Heredity seems to have something to do with the cause as it has been discovered in several generations. There is practically no treatment for the affection, though Crocker advises attention to defects of the general health, and stimulation of the scalp with the faradic brush.

57. **Skiagraphic Study of Normal Epiphyses.**—Corson's paper is a very thoroughly illustrated study of the epiphyses of the long and short bones at the age of 13, impossible to be fully abstracted here.

58. **Omental Torsion.**—Wiener reports personal observations of omental torsion in cases of hernia and gives a summary of the literature on the subject, condensing and reporting briefly all the cases that have been published, including his own. He says "from these it will be seen that omental torsion occurs more often in males than in females (presumably on account of the more frequent occurrence of inguinal hernia in men), that it is not met with in youth, and that it is found only in persons who have a hernia; although the diseased omentum is not always found in relation with the hernia. The portion of omentum affected may be small or may be composed of almost the entire omentum. The etiology of the cases in which the omentum is not connected with a hernia is very obscure. In other cases the etiology can generally be traced to forcible attempts at reduction of the hernia. In not a single case was the diagnosis made before operation. The cause for this is not far to seek. Not only are omental tumors extremely rare, but they have no characteristic symptoms; the symptoms they call forth are those produced by an abdominal tumor through its mechanical action. When the tension takes place in connection with a hernia, the diagnosis is naturally made of an incarcerated hernia. In all the cases the urgency of the symptoms was recognized, and prompt operation was performed. There is a practical point of some value. If we cut down on a hernia that produces the symptoms of strangulation and find only a strand of omentum in the inguinal canal, we should always investigate the intra-abdominal portion of the omentum to make sure that there is no torsion present there."

59. **Retrenchment of Lipomatous Abdominal Wall.**—In the case reported by Bullitt the subject was a very adipose woman, 38 years old, suffering from umbilical hernia. The operation performed consisted in taking a reef in the abdominal wall by dissecting out and removing a large portion of skin and muscle, which weighed several pounds. The abdomen, though greatly reduced, was still somewhat pendulous, and he thinks it somewhat of a mistake that the retrenchment was not more extensive. He remarks that resection of a fatty abdomen, which he has described, constitutes a procedure of which he has not been able to find a description, though doubtless it has been done before. The incision down to the deep fascia is at right angles to the line of least resistance of the deep abdominal wall. Its extent gives ready access to the hernial ring and permits unembarrassed closure of the deeper structures. Most of all, it reduces the ponderous, distressing and entirely superfluous abdominal pouch. If this case can be taken as an index, there need be no fear of failure. The patient, writing under recent date, reports herself in excellent condition, able to attend to her household duties, and with no signs of recurrence.

62. **Acute Intestinal Obstruction.**—Gibson's article is concluded in this issue and his summary is given as follows: "*Intestinal Obstruction.*—The most frequent causes of intestinal obstruction are intussusception and bands. The mortality is 47 per cent. The mortality of resection is 74 per cent. The mortality of artificial anus is 77 per cent. The mortality depends on the duration of obstruction and on its nature, being least in foreign bodies inflicting little or no damage to the intestine (25 per cent.), and most in such conditions as produce a tight constriction as 'openings' (67 per cent.). *Hernia.*—The ratio of mortality of inguinal hernia to femoral is as one is to two. The proportion of femoral hernia is 59 per cent. The ratio of mortality of inguinal hernia to femoral is as three is to four. The mortality of resection and primary enterorrhaphy is 26 per cent. The mortality of artificial anus is 53 per cent. *In General.*—Resection and primary reunion by apparatus (including Murphy button), mortality, 36 per cent. A large proportion of deaths is due to failure of technic, such as removal of too little intestine or imperfect suture. At least 13 per cent. of resections are attended with defects of technic, either resulting fatally or in the formation of intestinal fistulæ. *Artificial Anus.*—The mortality is lowest in internal obstruction, such as a foreign body, and highest in obstruction by an unyielding constriction; such as a band, and lower in hernia than in internal obstruction, chiefly because the surface exposed to absorption is less. The chief sources of mortality are: The desperate character of the majority of the cases. Failure to establish the opening above the site of constriction. Failure to provide for the relief of absorption of gangrenous changes in the intestine; death often necessarily occurring on this account, although the obstruction is perfectly overcome. Prominent among the drawbacks of artificial anus is the fact that it must subsequently be repaired. For in most cases there is no tendency to spontaneous closure, while minor plastic operations are rarely efficient. Formal liberation of the intestine and secondary resection is usually an exceedingly difficult operation, as is evident by its mortality—after intestinal obstruction, 43 per cent.; after gangrenous hernia, 27 per cent.; average, 30 per cent. The causes of death after operation fall into three main groups: 1. From causes inherent to the condition and little amenable to treatment, such as shock and pre-existing peritonitis—these causes accounting for the majority of fatalities. Improvement can only be hoped for by earlier recognition of the condition, thereby securing the performance of operative relief before the severer changes take place. 2. From causes depending chiefly on the nature and details of the operation, such as failure to relieve obstruction and defects in technique or failure to take account of the conditions to be dealt with. 3. On intercurrent conditions. *Prognosis.*—The most essential feature in the prognosis is the duration of the obstruction. In early interference there is generally only one condition to be fulfilled, removal of the obstruction. With long continuance of this condition, secondary changes of the greatest gravity supervene, requiring for their relief measures of great extent and difficulty. The nature of the obstruction is the next most important factor, acting in the same way as in the first instance as to changes in the intestinal walls, the prognosis being best in internal obstruction, and worst in tight external constrictions."

71. **Amyloid Substances.**—The pathologic findings of a case of apparently specific disease, the neurologic aspects of which will be discussed *in extenso* elsewhere by Dr. Newmark, are described by Ophuls with special reference to the origin and nature of the amylaceous bodies found. The general conclusions reached are: The substance of the amylaceous bodies is identical with, or at least similar to, amyloid substance. In the amylaceous bodies this material is present in crystalline form, in the amyloid substance in amorphous form. It would be advisable to use the word "lardaceous" instead of "amyloid," and perhaps to include under this term the peculiar form of "hyaline" which sometimes precedes and accompanies the amyloid substance.

74. **Necrotic Bronchopneumonia With Streptothrix.**—Two cases are reported by Norris and Larkin of bronchopneumonia characterized by intense catarrhal and necrotic inflammation of the bronchi and by the presence of streptothrix colonies in the bronchial lumina. Inoculation experiments on rabbits produced pulmonary abscess and empyema of the pleura and pericardium in two cases. The empyemal pus of these rabbits contained filaments and rods morphologically identical with those found in the human subject. The previous observations of various authors are noticed and they conclude that the streptothrix found was closely related if not identical with the streptothrix Israeli, obtained from typical cases of actinomycosis by Wolff and Israel in 1889, and the species isolated by Kruse in the case of a diabetic barber last year.

87. **Antitoxin Unit in Diphtheria.**—Smith reviews the facts in regard to the antitoxin unit as accepted and shows its unreliability. The old method of using ten times the minimum fatal dose to test the antitoxin strength of sera is not reliable, even when the toxins are prepared under uniform conditions, and at present we can do no better than utilize the standard provided by Ehrlich, and using the entire unit instead of only one-tenth unit in the operation of standardizing.

88. **Artificial Divisions in the Unfertilized Eggs.**—Matthews reports experiments similar to those of Loeb in the development under special chemical and physical conditions of the sea-urchin's egg. He gives credit to Morgan for the first experiments in this direction and to Loeb for the first carrying out of the embryo to full development. His own experiments were carried on coexistent with, though independent of Loeb, and he has succeeded in setting up a cell-division in the unfertilized sea-urchin's egg by depriving the egg of oxygen, by the action of heat and by exposure to ether, alcohol and chloroform. All the methods thus found for inducing cells to divide are those in common use to cause protoplasm to liquefy, and strongly indicate that the old view of Butschli that the karyokinetic figure is but the expression of the movement of the liquid cell, is true, hence he concludes that any means that will produce localized liquidation will set up karyokinesis. In closing he emphasizes the analogy between the egg and the nerve cell. The means which cause cell division or liquefaction are strong stimulants to nerve cells, indicating that in the production of nerve impulses we are dealing also with liquefaction of some portion of the cell body.

89. **Experiments With Formalin and Formaldehyde.**—Experiments have been carried on by Fischer on the toxic effects of formalin and formaldehyde, and he notes and gives in his preliminary communication the results. He finds that they produce intense congestive phenomena and edema and believes the fact explainable on the ground that the osmotic pressure of injected formalin is higher than that of the body fluids and thinks that trying to establish a mean between the two causes these symptoms. He therefore thinks that formalin causes the death of the cell in two ways: 1. By surrounding the cell with a fluid that has a higher osmotic pressure than the cell itself, thereby causing abstraction of the water from the cell. 2. By a deleterious chemical action on the cell. From certain histological evidence it is believed that it is a reducing property of the chemical which produces the death of the cell.

96. **Pyloric Stenosis.**—The hypertrophy of stenosis is especially noted by Scott and the possibility of its occurring when the muscular apparatus is such as to make dilatation of the stomach very slow. These cases are difficult to diagnose and may be even serious before dilatation occurs. The results of operation in, of course, the non-malignant, is so uniformly successful that it is often demanded for the best interests of the patient.

98.—See abstract in THE JOURNAL of October 13, p. 974.

99.—Ibid.

103.—Ibid.

104. **Sanatoriums for Consumptives.**—After describing one or two of the sanatoriums in the Black-Forest region of Germany, Schaffer reproduces in a somewhat condensed form an article on the treatment of pulmonary tuberculosis by Fraenkel, of Badenweiler, which was previously published in the *Muenchner medicinische Wochenschrift*, June 3 and 20, 1899. He does not lay much stress himself on the curative effect of these institutions, as he says the percentage of really cured is exceedingly small even under the best conditions. Fraenkel's article insists on the importance of early diagnosis and believes in the value of the tuberculin test, which he does not seem to consider dangerous. The importance of dietetic and hygienic treatment are the principal features of his article. He considers the sanatorium a resource for cases difficult to control in the initial stages as a sterner school and intermediate station for the open-air cures, and recommends it as the best asylum for all seriously ill who are alone in the world.

105. **Domestic Animals in Typhoid Fever.**—Stokes reviews the history and reports experiments made on chickens, rats, and cattle and concludes as follows: "In our experiments we have endeavored to produce infection through the natural route and by natural means by simply allowing the various animals to take in very large quantities of typhoid bacilli in their daily food. Although at least 500 colonies from the feces were carefully tested, we were not able to demonstrate the presence of any typhoid bacilli in two chickens, two white rats, two rabbits, two guinea-pigs, one calf, and two pigs. Although we have not employed a large number of animals, we feel justified in expressing the opinion that the typhoid bacillus can not, as a rule, maintain its struggle for existence in the intestines of the domestic animals. We therefore conclude that the dejecta of animals play no considerable part in the distribution of typhoid fever."

109.—See also ¶135.

114. **The Vectis.**—Bartlett describes the mechanism and use, as well as the history, of this somewhat antiquated instrument and shows that it has certain advantages even with other modern methods in obstetrics. His clinical experience has been limited, but in a few cases it has been very satisfactory. The reader is referred to the paper for details.

115. **The Management of the Defective Classes.**—Skelton reviews the facts in regard to the production of defectives, criminals, epileptics, idiots, etc., and holds that their prevention and the purification of the stock is the best remedy for this social evil. He formulates tentatively: 1. The obliteration of the stock of the worst cases of defectives by the removal of the procreative organs. 2. The same remedy applied to the insane with strong hereditary and nervous instability, especially those discharged from asylums as improved, slightly improved, etc., and generally classified under the general head of recovery with defects. 3. Medical examination of applicants for marriage licenses, the benefit of which he thinks would be largely indirect and educational. The efficacy of the examination would be sometimes counterbalanced by the deception of the examined, as it would be looked on as an infringement of personal rights. Lastly, proper education and knowledge of the facts in the case. A certain proportion of society would avoid evil consequences when they were explained to them. Heretofore the facts of heredity and evolution and the relation of these to disease have been unknown to the general public, but in their place we have metaphysics, mysticism, diabolism and deism, etc., supplanting physiologic and pathologic knowledge.

122. **Physical Training.**—McKenzie finishes an illustrated article on the subject of physical training, in which he shows its value in correcting deformities, meeting the conditions of diseases, etc., with the following conclusions: 1. Special physical training is rendered necessary for the young by the conditions of modern life. 2. The work is made special and scientific, having for its object the development and strengthening of every organ and faculty of the patient. 3. As we conduct this work it is mainly educative. Force from without the patient, however, is largely employed in such cases as can not of their own volition correct the deformity. To name affections benefited in the order in which good results have been observed I would place them thus: Hysteria, rotolateral curvature, flat-foot, round shoulders, pigeon-breast, flat chest, anemia, paretic weakness, chorea, imbecility. In this list I have placed hysteria first, because I have not known any method by which this condition, generally so unsatisfactory to deal with, has been brought so successfully under control.

129. **Abuse of Cardiac Remedies.**—Baumgarten notices the employment of digitalis and alcohol beyond the early desirable effects into their later undesirable ones in cases of disease. Strychnin also is noticed in the same connection, and is liable also to be abused. Digitalis is valuable only when it is necessary to raise the blood-pressure, alcohol simply for its

stimulating effect and not its later depressing effects. Strychnin should be given only when low blood-pressure exists, not so much by any immediate effect on the heart, but by its increasing the velocity and functions of the blood in vital organs—the brain, kidneys, etc., including of course the muscles of the heart itself. Over-stimulation of the spinal centers by strychnin may so increase the tension of the peripheral arteries as to overwork the weakened heart. He also notices the abuse of nitroglycerin, which is often carelessly used as a substitute for digitalis and has exactly opposite effects. The action of digitalis can be supplemented or modified, but never substituted by nitroglycerin. It is of use in collapse when the enfeebled heart is no longer able to keep up the blood-pressure to the lowest degree necessary for bare life. When we have arrived at the end of the utility of one drug, digitalis for instance, and have still to keep up the fight, we should try other remedies, caffein and strychnin in cases of low pressure, or in cases of contracted arteries nitroglycerin. The piling in of stimulants has never helped a failing heart and is strongly condemned.

130.—See also ¶135.

135. **Ectopic Pregnancy.**—Baldwin first notices the earlier dicta of Lawson Tait as to the impossibility of diagnosing ectopic pregnancy before rupture, and remarks that in the last ten years we have come to know a great deal more of that condition, and there are many cases in which symptoms arise where a presumable working diagnosis is possible. There are no pathognomonic symptoms, but usually we find the following: There is a history of several years of sterility (with many exceptions); missing of a menstrual period or two (with exceptions); some unusual pain in the pelvis situated usually in the region of an ovary, possibly for a few days more or less irregular hemorrhage, while there is generally to be found on one side or another of the uterus or back of it a fusiform cystic tumor, quite symmetrical in outline, painful on pressure, with usually evidence of pulsation. With these phenomena it is reasonable to suspect extrauterine pregnancy. Too much stress, however, must not be laid on menstruation or sterility. The pain is usually sharp and colicky or it may be of a dull throbbing constant character. When the presumable diagnosis has been made operation is advisable. He reports eleven cases.

FOREIGN.

British Medical Journal, November 3.

The Diagnosis of Diphtheria. H. B. DONKIN.—The distinction between croup and diphtheria, and the discovery of the bacteria, are noticed by Donkin, who calls attention to the fact that certain evils follow too much dependence on the bacteriologist by the physician. The practical teaching that the present stage of knowledge seems to demand is, according to Donkin, somewhat as follows: 1. Diagnosticians should at once regard and treat, without waiting for a bacteriologic report, all cases as diphtheria, in which the clinical signs and symptoms are such as would have raised little or no doubt in their minds as to their nature in the days before the coming of the bacillus. 2. They should also regard and treat as diphtheria all cases which, although lacking the usual clinical "stigmata," are shown by bacteriological examination to be associated with bacilli whose products kill animals and cause the characteristic lesions; albeit even here they may be in error, though on the better side. 3. The mere presence of bacilli—in the nose or elsewhere—"morphologically indistinguishable" from the pure diphtheria bacillus, the host being healthy and inoculation results negative, may probably be ignored in practice, and so also are any clinically recognized symptoms or signs of the concrete disease. In fine, does not the diagnosis of diphtheria still rest mainly for its surest foundation on the old ground of careful clinical observation, tempered and aided in some cases, it may be, by a judicial study of the report of the bacteriologist?

Myelopathic Albumosuria. T. R. BRADSHAW.—Myelopathic albumosuria may be defined, according to the author, as a disease characterized by the invasion of the cancellous tissues of the bones of the trunk by cellular growths, by the disappearance of osseous tissue, and by the presence in the urine of large quantities of peculiar albuminous substances belonging to a class of bodies known as the albumoses. The morbid anatomy of the disease consists in the peculiar change of the bones, chiefly the ribs, sternum and bodies of the vertebræ, in which the hard substance is reduced to a mere shell. The cancellous tissue almost entirely disappears and spontaneous fractures become common. The interior of the bone is occupied by a reddish gelatinous mass something like splenic pulp, which can be readily squeezed out by pressure on the thin and brittle bone. Microscopically it consists of a vascular mass of cells round or spindle-shaped, in some cases islets of cartilage. The whole structure resembles sarcoma and the condition is generally known as "multiple myeloma," a term which we owe to von Rusrizky, who described four cases of multiple tumors in the bone, in 1873. It is not certain whether the disease is the same condition, as there was no reference made to the condition of the urine. The organs, as a rule, are healthy. The kidneys seem to show nothing characteristic, excepting an occasional blocking of tubules and more or less degenerative changes. The disease usually occurs in the second half of life, and is apparently more frequent in men than in women. The symptoms may be classed under two heads, those connected with the bones and those with the urine. The first complaint is generally of pain in the lumbar region, generally aggravated by movement. The patient probably looks anemic, the pains do not yield to treatment, but there is nothing to suggest the serious condition excepting the urine. The pains become aggravated and the patient declines to exert himself. They are referred to the bones, tender spots arising in the course of the bones, the chest wall seems to yield, and actual fractures takes place, curvature of the spine appears and the mobility of the vertebral column is lost. In spite of all this the patient is still able to leave his bed and walks about until nearly the end, which is in striking contrast with another disorder sometimes confounded with it, namely, osteomalacia, in which the long bones are early affected. The characteristic feature of the urine is the presence of a proteid resembling albumin, but that differs in several ways. It coagulates at the low temperature of 140 F. and coagulation is redissolved on boiling. It is readily precipitated by hydrochloric acid and uric acid and the precipitations are dissolved on boiling. The hydrochloric-acid precipitate is, according to Bradshaw, the most satisfactory test.

The diagnosis presents no special difficulties, but the condition of the urine might lead to the diagnosis of large white kidney, or, if the albumose is spontaneously coagulated, to that of chyluria. The disease is apparently almost always fatal, but sometimes is very prolonged in its course. In one instance it began eight years before death. As a rule, the patients seldom go long without the symptoms causing them to seek advice. Intermissions are frequently noticed, which given rise to false hopes. Death occurs from exhaustion or from some intercurrent disease, usually pneumonia. No treatment seems to do any good, and great care must be used in handling the patient in the advanced stages. The association of albumosuria with new growths in the bone has no close analogy in any other disease, and the author considers its formation and excretion in the urine no less an essential part than the lesions of the bones. He suggests therefore the term myelopathic albumosuria. He concludes his paper with a tabulated list of published cases and a bibliography.

Suprarenal Gland Extract as a Hemostatic. O. F. F. GRUENBAUM.—Having earlier suggested the administration of suprarenal gland in cases of hemorrhage from the walls of the alimentary canal, the author briefly notices the physiologic action and therapeutics. The rationale of his suggestion was that the suprarenal extract caused the contraction of the plain muscular fibers of the blood-vessels when locally applied, its evident use in epistaxis together with the results of a series of experiments which led him to conclude that the administration of the gland by the mouth did not cause rise of the blood-pressure in normal individuals. One or two crushed 5-grain tablets given by the mouth is the most satis-

factory method of administration in hematemesis. The advantage of the extract over the more popular hemostatics arises in the fact that it acts in very dilute solution and does not tend to combine with albumin and become inert. It must, however, be remembered that it does not cause coagulation of the blood and therefore does not seal the bleeding points with clots. Very small doses can be given, as the drug acts in dilute solution, but it must be repeated at short intervals, for the vessel wall will only remain contracted while under its influence and coagulation is not accelerated. Two or three crushed tablets, mixed with a few ounces of water, injected into the rectum is the most satisfactory way of applying the remedy in hemorrhage from that viscus. He has not found it of any advantage in hemophilia and would not expect it if we accept the theory that congenital hypoplasia of the vessel-walls is the associated condition of the disease.

Mode and Rapidity of Reduction of Temperature by Quinin. WILLIAM SYKES.—Observations are here reported on the action of quinin as an antipyretic given in cases of high temperature in single large doses. The temperature was closely watched for two or three hours in each case. He finds that the quinin was rapidly absorbed, the temperature began to fall in forty-nine minutes, probably in less time in the first case, and in the second and third series within twenty minutes. The size of the dose did not seem to affect the rapidity of the diffusion. In the cases experimented on we have respectively 20, 40 and 20 grains without corresponding differences in the time of its effect. The methods of its action are obscure: 1. Destruction of pathogenic bacteria, which he thinks is negatived by the temporary nature of defervescence. 2. Neutralization of their resulting toxins, which is improbable, as they seem to bear no relation to each other. There remain only two probable methods of action, namely, on the heat-centers and on the sweat-centers. He thinks if it acted on the heat-centers the proportional decrease of temperature after exhibition of the drug would not be as irregular as it is, and the speed would not be affected by the amount of dosage. The drug acting on the nerve-centers might be liable to produce an immediately great and regular effect on its function which would be expected to agree in rapidity of action with the size of the dose administered. If, however, we accept the notion of its action on the sweat centers as true, an explanation of many of the difficulties is furnished Since defervescence by diaphoresis depends on the sweating itself and not on its action, it is obvious that the size of the dose of the drug administered, so long as it was sufficient to produce perspiration at all, would have no result on the speed of the defervescence. Since slight movements in bed, by which the surface becomes chilled, would temporarily stop the diaphoresis, the stationary and even retrogressive intervals would be quite explicable. Moreover, most or all the antipyretic groups possess one quality in common when given for reduction of temperature; they produce violent diaphoresis: it also occurs in night-sweats produced by the toxins of the tubercle bacilli, which are in like manner succeeded by a normal or subnormal temperature.

Bulletin de l'Academie de Medecine (Paris), October 23.

Method of Hemostasis in the Xiphopagus Operation. PORAK.—In this official report on Chapot-Prévost's communication in regard to his operation on the xiphopagus, Porak describes the method of hemostasis as compression on each side of the proposed incision in the connecting band by rolls of gauze placed on the skin and drawn tight together with a double, No. 5, silk thread which passed through all the layers of the abdominal wall on both sides and the liver at the same time. The compression was preliminary to the operation and kept up for a week afterward. The connecting band measured .155 by .0975. In the Indian twins it was .015 by .08, and in the Siamese twins, .075 by .06. Porak defines the monster as a monomphalian intermediate between the xiphopagi and thoracopagi. The surviving twin has five of the stigmata of hereditary syphilis; malformation of the head and body, dextrocardia, displacement of the liver, disturbances in vision and stammering; but there are no syphilitic antecedents known in the family and the three other pregnancies resulted in normal children before and since 1893, the date of the birth of the monster. Porak summarizes the latest research on the production of monsters: that it is due to a disturbance in nutrition, in either the ovum or the mother. Any infectious disease of the mother may make its influence felt on the development of the embryo. He rejects the conception of a pathologic heredity, observing that heredity is a preserving force, perpetuating the remotest ancestral characteristics of the race. It is pre-eminently preservative, fixed, constant, immutable, durable. What is called pathologic heredity, on the other hand, is destructive and conflicts with true heredity. It is necessarily accidental, variable and exceptional in its appearance and brief in its persistence. Porak adds that a certain number of apparently normal twins are in reality a monstrosity, due to the development of two germinal discs grafted on a single vitellus. This can be surmised when the twins are of the same sex, when the membrane separating the ova is absent or only constituted by the two amnions, and when there is a vascular communication between the placental circulation of the two amnions.

Echo Medical du Nord (Lille), October 28.

Needle in the Heart. R. LE FORT.—A lad of 11, in falling, drove a needle in his coat into the wall of the thorax in the fifth intercostal space. It was removed without trouble after a transverse incision one-half centimeter above the entering point. From the length and direction of the needle it was evident that it had penetrated deep into the right ventricle, but after a brief disturbance of the circulation—the pulse becoming imperceptible for twenty seconds—the conditions returned to normal and the lad was at play in a day or two. In 23 cases of the kind collected by Loison the mortality amounted to 60.8 per cent., always due to internal hemorrhage when cause is specified. In 3 cases the needle was extracted without incision and 3 times with incision, all recovering. The present case makes the fourth of the latter class. Seventeen new cases of surgical intervention on the heart have been reported during the last two years. The total number of successful sutures of the heart is now 9 out of 24, with 2 cases of long survival. Podrez deliberately undertook the search of a foreign body in the heart, with the intention of incising for it between preventive sutures if a trace had been found of it in the course of bimanual exploration and ten exploratory punctures.

Revue Internationale de Therapie Physique (Rome), Oct. 20.

Absorption Under the Influence of Massage. A. KELLGREN and C. COLOMBO.—The experimental research described in this communication, concluded from the preceding number, was conducted at London on rabbits. It was impossible to obtain governmental sanction for control experiments on dogs. The fluid injected was Prussian blue and lycopodium spores in gelatin. Massage invariably favored the absorption in all the organs to which it could be applied. It is logical to conclude that the same effect occurs in case of pathologic exudates. The absorption always takes place through the nearest lymphatics and their ganglia, supplemented by absorption through the veins. Deep "effleurage" is more effective in case of fluids injected under the skin or into muscles or articulations, but kneading or "petrissage" best promotes absorption in the deeper tissue.

Presse Medicale (Paris), October 31.

Treatment of Hydrocele by Turning the Vaginalis Inside Out. L. LONGUET.—Excellent results have been attained in the cure of hydrocele by inversion or eversion of the vaginalis, after subserous decortication and hemostasis. The principle is to turn the serous membrane with the secreting surface outward, when the secretion is absorbed as it forms. Longuet has modified the original procedure and claims several advantages for his new technique, which requires neither decortication nor hemostasis. A transverse fold is taken up over the testis and cut with the scissors down to the vaginalis, which is then drawn up into a cone and cut in the same way with the scissors and the wound enlarged to 3.5 cm. The testis is then drawn out and up as far as possible, the assistant pulling the scrotum down at the same time. The vaginalis follows and

turns inside out with this maneuver. A couple of stitches are taken to hold it in place. The testis is not replaced in its former position, but a new cavity is made for it in the middle of the inner lip of the incision, lightly separating the tissues with the forefinger. The recess thus formed is inside of and parallel to the old cavity. The testis is not in normal anteversion, but in retroversion, twisted inward a quarter of a circle, the elements of the cord twisting with it. The entire operation is complete in a minute. Not a drop of blood is lost and the patient returns to business next day as usual. Out of twenty-two cases thus operated on nearly two years ago, twelve have been seen recently, and all are completely cured of their hydrocele, with no inconveniences at any time. If the hydrocele is very large, Longuet excises a portion of the vaginalis, otherwise proceeding as above. He reports six cases thus treated in 1898 with perfect success. He operates with local or general anesthesia or none, according to the sensitiveness of the patient.

Semaine Medicale (Paris), October 31.

Ozenous Pleurisy. G. DIEULAFOY.—There are three varieties of fetid pleurisy, simple fetid, putrid, and gangrenous. They can not be diagnosed without an exploratory puncture, which should be prompt. Immediate surgical intervention is the only treatment. There is little difference between the putrid and gangrenous forms. They may develop parallel or successively. The putrid effusion usually occupies the large pleural cavity, while the fetid is encysted. The former is frequently due to embolism; the original focus may have been in the vagina or appendix or elsewhere. It is usually distinguished by a pneumothorax without perforation of the pleura. Several instances are described of recovery after prompt evacuation of a gangrenous pleuritic effusion, uncomplicated by gangrene of the lung.

Deutsche Med. Wochenschrift (Leipsic), October 18 and 25.

Tuberculosis of the Bladder. L. CASPER.—Among the points emphasized in this article are the necessity of refraining from cystoscopy, in case of tuberculosis of the bladder and also from distending the organ with fluids. The amount introduced should never be sufficient to cause pain nor even a sense of fulness. Casper believes that the combination of appropriate hygienic, internal and local measures will always relieve and frequently cure this affection. In his experience with thirty-five cases he has had no success with local remedies except with lactic acid and sublimate, and he has been compelled to discard the former on account of the pain it induces. In 20 cases treated with instillations of sublimate, 14 have been improved, 2 cured, and 4 were unaffected. He first instils about 20 c.c. of a 1 per 10,000 to 1 per 1000 solution, repeating every fourth to eighth day, and progressively increasing to a 1 per 10,000 to a 1 per 5000 solution, the fluid retained as long as possible without much pain. He has never noted any symptoms of intoxication from the sublimate, but discontinues it if no benefit is apparent after three or four applications. He finds gonorrhea a frequent predisposing factor.

October 25.

Gonorrheal Nervous Affections. A. EULENBURG.—This address by the editor of the *Wochenschrift* was delivered at the recent Congress of Physicians and Naturalists. He stated that nervous affections of gonorrheal origin have been too much neglected hitherto, and that they deserve at least as much attention as syphilitic nervous affections. He classifies them as neuralgia, atrophy of the muscles and atrophic paralysis, and neuritis or myelitis. The continuance of a gonorrheal lesion elsewhere, with or without the discovery of gonococci, suggests gonorrhea in the etiology, and certain special characteristics of the nervous affection aid in differentiating it. Ischialgia is the most frequent manifestation of the neuralgic process. The lumbosacral nerve roots are usually involved, especially the genital nerves, more rarely the nerves of the arm. The symptoms appear as a sudden violent paroxysm of pain, sometimes accompanied by intermittent fever with no indications of any other cause than the preceding or concomitant gonorrheal affection. It is frequently accompanied by sexual or general neurasthenic manifestations. Atrophy of the muscles and atrophic paralysis usually affect the shoulder or knee in the form of periarticular atrophy of the muscles or atrophying myositis, occasionally as neuritic atrophy, progressively spreading and involving symmetric portions of the opposite side of the body. The gonorrheal forms of spinal affections present a clinical picture with a superficial resemblance to that induced by degeneration of the posterior column. They are distinguished, however, by greater involvement of the motor sphere, manifested as atrophy of the muscles on a basis of neuritic or poliomyelitic degeneration. The absence of the eye and pupil symptoms is also specific. Eulenburg concluded with the statement that he has found iodipin remarkably effective in the treatment of severe neuralgias and gonorrheal ischialgia, as others have reported in various venereal nervous affections. "The introduction of iodipin and bromipin into therapeutics can be considered one of the most important advances in the application of iodin and bromin to the treatment of nervous diseases."

Muenchener Medicinische Wochenschrift, October 23.

Bacteriotherapy and Yeast for Constipation. E. ROOS.—The influence of the bacteria in the intestines on their normal function has been very little studied. Roos conceived the idea that by introducing bacteria from a normal intestine in cases of constipation, the conditions might be made to approximate normal. Cultures of the bacillus coli from healthy individuals were ingested by himself and seven other physicians. In three the effect was surprisingly favorable. After the second day they had one or two stools a day of soft consistency, for the first time in ten years in one case. Of the two subjects with normal stools, one was unaffected and the other had diarrhea. The effect of the bacteriotherapy continued for two weeks after taking the cultures and then gradually subsided. Experiments with killed bacilli were negative. Roos also administered yeast to relieve constipation. The results were negative in four out of twenty cases. In all the remainder a marked influence of the yeast on the stools was manifest. They became soft, regular, and sometimes more frequent. Similar results were obtained with yeast killed by heat. All but four out of eighteen were cured of their constipation. The effect of the yeast persisted for weeks after its discontinuance. In all the experiments the cultures or yeast were taken in capsules coated with collodion and then with keratin, to avoid contact with the gastric juice.

Surgical Treatment of Nomatous Gangrene. H. VON RANKE.—The writer had occasion to observe five cases of noma of the face consecutive to measles in a severe epidemic of the latter in 1885. Since then he has not seen a case until after a mild epidemic of measles last winter, when three cases of noma were brought to his clinic. Each was treated with extensive excision and thermocauterizing of the region involved, without waiting for the gangrene to assume large proportions. Each was cured and with comparatively little disfigurement. All his previous patients had died from the effects of the progressive gangrenous process.

Wiener Klinische Rundschau, October 7.

Surgical Treatment of Anasarca. MENKO.—The writer's experience with the tapping of anasarca has been extremely favorable. He reports, among others, a severe case complicated by gangrene of the lungs and acute nephritis completely cured by continuous drainage of one extremity in combination with other measures. He uses a Curschmann canula, slightly modified, and prevents infection afterward by a spring-bandage, something like a tourniquet. A strip of iodoform gauze is placed over the wound and the metal spring is applied with the convex side toward the skin, fastening it in place with moderate pressure. This prevents oozing and the wound closes effectively in three days, with none of the maceration or inflammation that frequently follows other methods.

Wiener Klinische Wochenschrift, October 11.

Trachoma. C. ZIEM.—In this long article Ziem shows how the prevalence of trachoma has kept pace with the destruction of forests and consequent production of dust and sand storms.

and also with the amount of decaying vegetation and soil in marshy or inundated regions. He traces this connection from the remotest antiquity. The influence on the eye may be direct or by the mediation of a nasal catarrhal affection. Treatment is certain to be ineffectual unless the nasal affection is cured and the frequent relapses in trachoma are usually due to neglect of this precaution. Miasmatic surroundings may affect the eye indirectly by inhalation of the malarial emanations and consequent catarrhal lesions of the upper respiratory passages, or by way of the circulation after ingestion of decaying organic matter in the drinking water or cooked with the food. He makes a convincing plea for international forest laws and prophylactic measures in miasmatic regions. Mesopotamia and Egypt have suffered most, perhaps, from the destruction of the forests mentioned by the ancient writers. The present dust and sand swept treeless region is the home of trachoma, especially where the inundations of the Nile add another element. Contagion is a subordinate factor in the etiology of trachoma.

Toe Reflex in Children. F. PASSINI.—Investigating the Babinsky sign in large numbers of children, Passini's experience has confirmed the invariable occurrence of extension instead of the normal flexion of the big toe in case of organic injury of the pyramidal tracts. In tubercular meningitis the sign varied from day to day, probably due to periodical edema in the tracts. In children less than a year old, the pyramidal tracts are still so undeveloped that extension occurs as in case of a lesion.

St. Petersburger Med. Wochenschrift, October 20.

Symptoms of Latent Syphilis. C. STROEHMBERG.—Three or four weeks after the primary manifestation, the glands may swell and for a long time remain the only appreciable lesion. Indications of fever, circumscribed reddish spots and erosions on the mucous lining of the mouth and lips, especially at the corners, and on the genitals, herald the arrival of pronounced symptoms of syphilitic infection. A catarrhal cold in the head is also a frequent premonitory symptom. Much harm results from contagion during this period if the physician waits for unmistakable symptoms before starting treatment. General lymphadenitis is the cardinal symptom of the latent stage, and the occasional accompanying anemia. Leucoderma of the back and sides of the neck is a positive sign of the condylomatous period. It is found ten times more frequently in women than in men. Neisser has noted it in 45 per cent. of his female patients in the condylomatous stage and the writer in 74 per cent. In men buccal leucoplasia, psoriasis of the tongue with pachydermia of the mucosa of the ear are more frequent. These manifestations can be considered "independent latent symptoms," as also the falling of the hair and indistinct ring, horseshoe or arch-shaped erythemata. Slight wounds and scratches heal with extreme slowness and leave pigmented scars. Consecutive phenomena are the predisposition to tuberculosis, rachitis, scorbutus and carcinoma. Among the subjective symptoms of the latent stage are fatigue, cephalalgia, insomnia, psychic depression, neuralgia, rheumatoid pains in the muscles and joints, loss or increase of appetite, palpitations and disturbances in sight or hearing. Among the rarer manifestations of latent syphilis are affections of the nails, swollen lymphatics leading from the primary lesion, brownish spots after roseola, slight swelling of certain joints, periosteum, tendon sheaths and bursæ and also of the muscles, with enlargement of liver or spleen, bronchial or intestinal catarrh, icterus, stricture of the rectum, albuminuria or diabetes, premature arteriosclerosis and endocarditis. Central or peripheral disturbances in the central nervous system have also been observed during the condylomatous stage, also disturbances in speech, memory or mind, and hemiplegia, neuritis, especially in the domain of the trigeminus and optic nerves, and circumscribed paralysis of the facial, oculomotor nerves, etc. Iritis, cyclitis, choroiditis and retinitis have also been noted and catarrh of the middle or internal ear. The cases of syphilis precox warn against concluding that persons w gummatous manifestations are necessarily non-infectious. Hemorrhages from lungs or stomach are extremely rare at an early stage.

Queries and Minor Notes.

DRUGGISTS AND PRESCRIPTIONS.

KANSAS CITY, MO., Nov. 12, 1900.

To the Editor:—As a solution to the problem referred to in the issue of November 10, by two correspondents, concerning the rights of physicians and druggists in relation to prescriptions, I beg leave to submit the following, which I will maintain until refuted by legal authority.

When a physician delivers a prescription to a patient, and the patient pays for it, or it is charged to his account, or is given to him gratuitously, the transfer is the same as in other property; to all meaning and intent, the physician sells the prescription to the patient, and it becomes the property of the purchaser, and he has the right to deliver it to any druggist he chooses; but after delivering it to a druggist who fills it, he loses his title to it, and the prescription becomes the prope..y of the druggist, who should preserve it for his own protection, as well as for that of his customer. The druggist should not hold the prescription for the purpose of refilling it without the advice of the physician who wrote it, but as a voucher to protect himself in case of alleged poisoning, or violation of the law. As an example, where intoxicants, or other poisons have been furnished on a prescription, the druggist becomes the sole owner of the prescription, and neither the physician nor patient is entitled to any property interest in it. When a prescription is filled it becomes the property of the druggist who fills it, and he has a moral and legal right to preserve it; and he has the same legal right to refill it, that he has to sell the same preparation without a prescription; but he has no moral or legal right to refill any prescription without permission, which contains an ingredient, the sale of which is prohibited by law, when not prescribed by a physician; and he has no moral, social, or professional right to refill, or to transfer to be refilled, any prescription, no matter how harmless its ingredients may seem to him, without the written request of the prescriber.

Have your own prescription blanks, without the name of any druggist on them, and have printed on the backs, in plain, but fine type, the following:

Notice: Never have a prescription filled a second time, without the advice of your physician to that effect; because a medicine which has a curative effect in one attack, may not be the proper remedy in a subsequent one; owing to new complications which may set in.

Never use a preparation which has been prescribed for some other person; because a medicine which will cure one patient, may not be a safe remedy for others, even though they have some of the same symptoms; owing to the fact, that different diseases may present similar symptoms, and yet require different treatment.

For the safety of patients, druggists are requested not to fill this prescription a second time, without the written advice of the prescriber.

After considerable deliberation of both the professional and legal faces of this subject, I devised the foregoing plan, which has assisted me, and will probably aid in reviving "a Slain Victim," and be worth something to Bro. J. B., of Essex, and other readers of THE JOURNAL. Respectfully, J. L. SHORT, M.D.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Nov. 1 to 7, 1900, inclusive:

Charles N. Barney, acting asst.-surgeon, from Fort Monroe, Va., to Fort Dade, Fla., for temporary duty during the absence of Acting Asst.-Surgeon J. J. Shafer.

Edward G. Beeson, captain and asst.-surgeon, U. S. V., recently appointed (from first lieutenant 39th U. S. V. Inf.), with rank from Oct. 30, 1900, is assigned to the 39th U. S. V. Inf.

John E. Bingham, acting asst.-surgeon, when relieved from duty at Fort Walla Walla, Wash., by Acting Asst.-Surgeon Whitney, to report by letter to the surgeon-general for annulment of contract.

Isaac W. Brewer, captain and asst.-surgeon, Vols., recently appointed (from first lieutenant and asst.-surgeon, 36th U. S. V. Inf.), with rank from Oct. 12, 1900, is assigned to the 36th U. S. V. Inf.

William H. Brooks, acting asst.-surgeon, from Fort Hamilton, to temporary duty at Fort Schuyler, N. Y., after which he will proceed to San Francisco, Cal., for duty with troops en route to Manila, P. I., and on arrival at Manila will report for assignment in the Division of the Philippines.

Lawrence C. Carr, major and surgeon, U. S. V., relieved from further duty in the Division of Cuba, to report to the surgeon-general at Washington, D. C., for instructions.

Henry R. Carter, acting asst.-surgeon, previous orders revoked; he will proceed from Seattle to Vancouver Barracks, Wash., for port duty at the latter place.

Jefferson R. Kean, major and surgeon, Vols., previous orders relieving him from further duty in the Division of Cuba and assigning him to post duty at Fort McHenry, Md., revoked.

James H. McCall, acting asst.-surgeon, leave of absence granted.

George J. Newgarden, captain and asst.-surgeon, U. S. A., previous orders directing him to proceed from Fort McHenry, Md., to Fort D. A. Russell, Wyo., revoked.

Seaton Norman, major and surgeon, Vols., recently appointed (from captain and asst.-surgeon, 39th U. S. V. Inf.) with rank from Oct. 30, 1900, is assigned to the 39th U. S. Vol. Inf.

J. J. Shafer, acting asst.-surgeon, leave of absence granted.

Samuel S. Turner, acting asst.-surgeon, from the recruiting office at Chicago, to duty at Fort Sheridan, Ill.

Walter Whitney, acting asst.-surgeon, from Fort Sheridan, Ill., to duty at Fort Walla Walla, Wash.

Robert N. Winn, lieutenant and asst.-surgeon, U. S. A., leave of absence granted; thereafter to report for duty at Fort Riley, Kan.

Edwin P. Wolfe, lieutenant and asst.-surgeon, U. S. A., relieved from further duty in the Department of Eastern Cuba and assigned to post duty at Fort Hamilton, N. Y.

Charles L. Wyche, acting asst.-surgeon, from St. Louis, Mo., to San Francisco, Cal., for duty with troops destined for service in the Division of the Philippines and on arrival in Manila, to report for assignment in the Division.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy, for the week ending Nov. 10, 1900:

Medical Inspector J. C. Boyd, detached from the *New York* when out of commission, and ordered to the *Kearsarge*.

P. A. Surgeon E. S. Bogert, Jr., detached from the *New York* when out of commission, and to duty on the *Massachusetts*.

P. A. Surgeon M. S. Elliott, detached from the naval station, Port Royal, S. C., and ordered to the *Annapolis*, when placed in commission.

Asst.-Surgeon W. M. Garton, detached from the *Massachusetts*, and ordered to the *Indiana*.

Asst.-Surgeon J. St. J. Butler, appointed asst.-surgeon from Oct. 26, 1900.

P. A. Surgeon J. M. Moore, ordered to the naval station, Port Royal, S. C.

P. A.Surgeon E. M. Shipp, detached from Norfolk Hospital and ordered to duty on the *Michigan*.

P. A. Surgeon H. D. Wilson, detached from the *Michigan* and ordered to Norfolk Hospital, Va.

P. A. Surgeon L. W. Spratling, detached from Yokohama Hospital, and ordered to Cavite naval station.

Pharmacist S. Douglass, ordered to additional duty on the *Massasoit*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned service for the seven days ended Nov. 8, 1900:

Surgeon D. A. Carmichael, granted leave of absence for thirty days from Oct. 23.

Surgeon G. M. Magruder, granted leave of absence for seven days from Nov. 17.

P. A. Surgeon C. P. Wertenbaker, to proceed to Natchez and Jackson, Miss., on special temporary duty.

P. A. Surgeon G. B. Young, granted leave of absence for two days. Granted leave of absence for five days, on account of sickness.

Asst.-Surgeon M. H. Foster, to proceed to Seattle and Tacoma, Wash., on special temporary duty.

Hospital Steward R. H. Gibson, granted leave of absence for thirty days from Dec. 7.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Nov. 9, 1900:

SMALLPOX—UNITED STATES.

Colorado: Arapahoe County, Oct. 13-25, 5 cases; Elber County, Oct. 19, 1 case; Saguache County, Oct. 14, 1 case.
District of Columbia: Washington, Nov. 3, 1 case.
Kansas: Wichita, Oct. 27-Nov. 3, 3 cases.
Kentucky: Lexington, Oct. 27-Nov. 3, 2 cases.
Louisiana: New Orleans, Oct. 27, Nov. 3, 2 cases.
Massachusetts: Taunton, Oct. 27-Nov. 3, 1 case.
Michigan: Detroit, Oct. 27-Nov. 3, 1 case.
Ohio: Cleveland, Oct. 28-Nov. 3, 1 case.
Oregon: Portland, Oct. 31, 1 case.
South Dakota: Sioux Falls, six months ended Oct. 31, 1 case.
Utah: Salt Lake City, Oct. 27—Nov. 3, 5 cases.
Tennessee: Memphis, Oct. 27-Nov. 3, 1 case.

SMALLPOX—FOREIGN.

Bohemia: Prague, Oct. 13-20, 2 cases.
England: Liverpool, Oct. 13-20, 2 cases; West Hartlepool, Oct. 13-20, 1 case.
France: Paris, Oct. 13-20, 11 deaths.
Greece: Athens, Oct. 6-13, 1 case.
Italy: Resina, Oct. 24, black smallpox reported present.
Mexico: Mexico, Oct. 14-21, 1 case; Vera Cruz, Oct. 20-27, 3 cases, 1 death.
Russia: Moscow, Oct. 6-13, 1 case, 2 deaths; Odessa, Oct. 13-20, 4 cases, 4 deaths; Warsaw, Oct. 6-13, 18 deaths.
Scotland: Glasgow, Oct. 19-26, 29 cases, 2 deaths.
Spain: Oct. 13-20, 1 case.

YELLOW FEVER—UNITED STATES.

Mississippi: Natchez, Nov. 6, 1 case.

YELLOW FEVER—FOREIGN AND INSULAR.

Colombia: Barranquilla, Oct. 13-21, 2 cases, 2 deaths; Bocas del Toro, Oct. 24, 1 case.
Cuba: Cibara, Oct. 16, 1 death; Havana, Nov. 2, 16 cases, 1 death; Sagua, Nov. 2, 1 case.
Mexico: Mexico, Oct. 14-21, 1 death; Tampico, Oct. 21-28, 3 cases, 1 death; Vera Cruz, Oct. 20-27, 12 cases, 7 deaths.

CHOLERA.

India: Bombay, Oct. 9, 30 deaths; Karachi, Oct. 7, 3 cases, 2 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Oct. 14-Nov. 6, 4 deaths.

PLAGUE—FOREIGN AND INSULAR.

Germany: Bremen, Nov. 6, one death from plague, a seaman on a vessel from Buenos Ayres.
India: Bombay, Oct. 2-9, 87 deaths.
Japan: Kobe, Nov. 2, reported present; Osaka, Sept. 11-Oct. 7, 25 cases, 20 deaths.
Mauritius: Port Louis, Sept. 7, 7 cases, 4 deaths.
Scotland: Glasgow, Oct. 19-26, 10 cases.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

Postage in the United States and Canada, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free; foreign postage, $2.50. Subscriptions may commence at any time. Volumes begin with the first issue of January and of July.

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